Requirements for Alteration Design Registration Based on Fitness-for-Service

AB–535

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Table of Contents

FOREWORD

As provided for under Section 40 of the Pressure Equipment Safety Regulation, the Administrator in the pressure equipment discipline has established that ABSA document AB-535 “Requirements for Alteration Design Registration Based on Fitness-for-Service” provides guidelines and specifies requirements that must be met for registration of a Fitness-for-Service alteration design.

1.0 INTRODUCTION

ABSA has issued documents such as AB-506 and AB-513, which both discuss the use of Fitness-for-Service (FFS) assessment when pressure equipment is found to be damaged during in-service operation or found to no longer comply with the original code of construction. The general expectation is that pressure equipment will be

a) repaired, altered (de-rated), or taken out-of-service
b) Alternatively, a Fitness-for-Service (FFS) assessment may be considered to justify the continued use of the pressure equipment without repairing the damage or altering the operating conditions. Design registration is required when FFS is to be used for this purpose.

The requirements in this document are based on the application of API 579-1/ASME FFS-1 *Fitness for Service*. API 579-1/ASME FFS-1 is an industry-recognized practice that provides detailed assessment procedures for specific types of damage and flaws in in-service pressure equipment. It may be considered as an alternative standard for the evaluation of in-service pressure equipment in the context of Section 23 of the Pressure Equipment Safety Regulation. Fitness-for-Service assessment may be used as part of an FFS alteration design. An FFS alteration design, when accepted by ABSA, may be used by the owner to permit pressure equipment that is not compliant with the original registered design to remain in service under certain conditions that will provide for safe operation of the pressure equipment.

FFS alteration designs shall be submitted by the owner to ABSA Design Survey for review and registration with the Design Registration Application form AB-31 and all required pertinent documents. ABSA Design Survey acceptance and registration of the FFS alteration procedure design is a mandatory requirement for continued use of the pressure equipment.

As Fitness-for-Service assessments are complex and multidisciplinary in nature, the involvement of a Professional Engineer in accordance with Section 9 of the PESR is a mandatory requirement.

This ABSA requirements document was developed through close cooperation with plant owners, FFS specialists and other stakeholders. Their input has been invaluable in compiling this document.

ABSA policy documents are living documents that are reviewed periodically to ensure that they are aligned with current industry practices. We welcome any suggestions you have to improve this document.

Please provide your comments to:
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2.0 DEFINITIONS AND ACRONYMS

ABSA Safety Codes Officer (SCO) – means a safety codes officer, designated under the Act, in the pressure equipment discipline. [PESR 1(1)(ee)]

ABSA Design Surveyor – is an ABSA Safety Codes Officer (SCO) who holds the required Safety Codes Officer designation and designated powers under the Safety Codes Act and is competent to assess that the design of pressure equipment complies with the Alberta Regulations and Code of construction requirements.

Alteration – means any change to an item of pressure equipment, as described in the original manufacturer's data report, which requires a change of design calculations or otherwise affects the pressure-containing capability of the item of pressure equipment. [PESR 1(1)(d)]

Non-physical changes such as a change in the maximum allowable working pressure or design temperature of a boiler or pressure vessel pressure retaining item are considered alterations, as are reductions, such as reduction in minimum temperature.

Damage mechanism – any type of deterioration encountered that can result in flaws or defects that can affect the integrity of pressure equipment; for example, corrosion, cracking, erosion, dents, and other mechanical, physical, or chemical impacts.

Design – includes plans, diagrams, drawings, and specifications depicting the arrangement and operation of any thing, process, or activity to which the Safety Codes Act applies. [SCA 1(1)(j)]

Fitness-for-service – quantitative engineering evaluations that are performed to demonstrate the structural integrity of an in-service component that may contain a flaw or damage.

> **Note 1:** Fitness-for-Service assessments shall be based on the latest edition of API 579-1/ASME FFS-1.
>
> **Note 2:** For the purpose of this document and whenever Fitness-for-Service assessment or the acronym FFS is used within this document, it shall be understood that they are used only in a context as part of FFS alteration procedure design.

FFS Alteration – means an alteration to pressure equipment based on Fitness-for-Service and that is subject to specific conditions.

> **Note 1:** The FFS Alteration is an applied, comprehensive procedure for ensuring safe operation/service of damaged pressure equipment based on an FFS assessment, in accordance with AB-506, AB-513 and API 579/ASME FFS-1, in order to provide an acceptable level of integrity.

Owner – includes a lessee, a person in charge, a person who has care and control and a person who holds out that the person has the powers and authority of ownership or who for the time being exercises the powers and authority of ownership. [SCA 1(1)(v)]

Owner's designated agent – means the person designated to act as a liaison between ABSA and Owner's organization for the purpose of design registration application.

Owner-user – an owner that has provided an Integrity Management System in accordance with the Pressure Equipment Safety Regulation and has been issued a quality management system Certificate of Authorization Permit under the PESR Section 11(3).

PESR – means Pressure Equipment Safety Regulation (AR 49/2006).

Pressure Equipment – means a boiler, a fired-heater pressure coil, a thermal liquid heating system and other equipment designed to contain expansible fluid under pressure, including, but not limited to, pressure vessels, pressure piping systems, and fittings, as defined in the regulations. [SCA 1(1)(y)]

Pressure Equipment Integrity Management (PEIM) – a PEIM system is a quality management system that meets the requirements of AB-512 and for which the owner holds a Certificate of Authorization Permit in accordance with Section 11(3) of the Pressure Equipment Safety Regulations.

Registered Design – means a design as defined in the Safety Codes Act and registered in accordance with the PESR Section 14.

Note: For existing pressure equipment, this includes its original registered design and any registered modification, repair, or alteration designs made to it.

Repair – work necessary to restore an item of pressure equipment to a safe and satisfactory operating condition, provided that there is no deviation from the original registered design.

Note: "Original design" includes previously registered design alterations.

ReRate – A change in the design temperature rating, the minimum design metal temperature, or the maximum allowable working pressure of an item of pressure equipment.

Risk Assessment – means a comprehensive and systematic process of evaluating the potential risks to people, environment, and property that may be result of operating the pressure equipment.

Root Cause Analysis – means an investigation to determine the source or reason for the damage mechanism(s) that produced the deterioration/flaw in the pressure equipment.

3.0 SCOPE, INTENT, AND LIMITATIONS

a) The scope of this document covers FFS alteration design registration based on a Fitness-for-Service assessment, as required by AB-513 and AB-506, in accordance with the PESR.

b) The intent of this document is to provide guidance for the owner in regard to design submission requirements, whenever registration of an FFS alteration design is pursued.

c) The FFS alteration design registration application may be considered for damaged pressure equipment assessed using the current edition of the Fitness-for-Service standard and is limited to owner-users who have a valid PEIMS accepted by ABSA.

d) Other owners who demonstrate to ABSA Inspection SCO that they have the equivalent ability to safely operate, monitor, and maintain integrity of pressure equipment subject to FFS alteration may be considered.

3.1 Principles for Use of Fitness-for-Service Assessment

The use of the Fitness-for-Service Assessment may be considered for conditional continued service of damaged and/or flawed equipment based on the following principles:

a) There is a valid reason for not performing repair or re-rating.
b) The determination that the equipment has an acceptable level of integrity for the continual service interval based on Fitness for Service Assessment.
c) The risk of operating the damaged pressure equipment has been evaluated and accepted by the owner.
d) The owner has a comprehensive process in place during the continual service to provide for appropriate and acceptable management of the risk(s) and safe operation of pressure equipment.
e) The risk of operating pressure equipment subject to FFS alteration design shall be managed by implementation of appropriate technical and administrative procedures. The risk management shall provide for acceptable level of integrity during the service timeframe.
f) The Fitness-for-Service assessment shall include a specified and pre-determined date for the permanent resolution of the defect/flaw, or it shall provide a detailed monitoring and risk management plan to ensure continued and safe operation. The monitoring plan shall define all pertinent variables and corresponding acceptance criteria.
g) The owner has detailed documentation and record keeping systems, maintenance, and monitoring programs and all other

required activities to ensure for the safe, continual operation of the equipment or the component.

h) The pressure equipment subject to the FFS alteration design may be in continued, conditional service only if the service conditions are not changed.

3.2 Fitness-for-Service Limitations

3.2.1 Fitness-for-Service Assessment Limitations

Fitness-for-service assessments shall **not** be considered for the following:

a) pressure equipment in public occupancy service
b) pressure relief devices or flanged joints connecting a pressure relief device
c) new construction of pressure equipment
d) for the purpose of re-rating (up-rating of in-service pressure equipment)

3.2.2 FFS Alteration Limitations

a) When FFS alteration design registration includes acceptance for a limited and pre-defined period of time, the registration expires when any of the following is applicable:

   i. the pre-defined period of time has passed
   ii. the monitoring system indicates that the monitored variable (e.g., thickness, crack depth, etc.) is outside of the acceptance criteria
   iii. the service conditions are changed

b) FFS alteration design registration becomes void when equipment is sold, relocated, or re-rated.

For the limitations identified above, the owner may make a submission to re-register the FFS alteration design based on conditions that are current at the time.

Informative Annex 2 provides some additional guidance on the continued use of equipment for which the FFS alteration design has become void.

4.0 GUIDELINE FOR FFS ALTERATION DESIGN

a) All of the below-listed elements are considered minimum and are essential for comprehensive FFS alteration design registration application.
b) It is important to understand that the listed considerations may not be sufficient to address all specifics of all possible variations of use of an FFS

alteration. Additional consideration may be necessary for proper development of FFS alteration design to ensure the owner will provide for safe operation of the subject pressure equipment.

c) Whenever the submitter deems that some of the above considerations may not be applicable, the submitter may provide clarification and rationale for non-consideration to help efficient processing of the application.

4.1 Developing an FFS Alteration Design

The development of FFS alteration may be achieved through a two-step process:

a) FFS assessment — to determine if the equipment condition is acceptable for consideration for continued service
b) Procedures development — operational, maintenance, inspections, and other needed procedures to provide for acceptable level of integrity during the service timeframe

4.2 Submitting an FFS Alteration Design

As indicated in ABSA documents AB-506, Section 13, and AB-513, Section 8.3, an FFS alteration design proposal shall be submitted to ABSA's Design Survey department for survey and registration by an ABSA SCO.

Completed Design Registration Application by using the AB-31 form and including all required documents and information may be submitted to ABSA's Design survey by either of the following:

a) the owner
b) the owner's designated agent (with the concurrence of the owner)

4.3 Documentation considerations for an FFS Alteration Design Registration Application

As a minimum, the following information/documents should be submitted for an FFS alteration design registration application in order to be considered for survey and registration:

1) Design Registration Application — form AB-31 (completed)
2) Equipment identification
3) Most relevant inspection report
4) Owner's reasoning/justification for using the Fitness-for-service assessment (acceptable to ABSA)
5) Fitness-for-Service assessment
6) Root cause analysis or damage mechanism identification
7) Monitoring and Maintenance plan
8) Action Plan and/or Mitigation Procedures (as applicable)
9) Contingency plan or emergency procedures (as applicable)

10) Timeline and plan for permanent resolution (as applicable)
11) Owner statement

Note: SCO-Design Surveyor may request additional information if deemed necessary, as provided by PESR.

4.3.1 Design Registration Application Form

This is a completed form AB-31. The form is available on the ABSA web site: www.absa.ca.

4.3.2 Equipment Identification

It is essential that the following information be included in the document describing the equipment:

a) serial number
b) owner's identification number(s)
c) CRN number(s) or PP number
d) "A" number(s)
e) design conditions
f) past repair/alteration details
g) past and current operating conditions (as applicable)
h) continued service operating conditions
i) other loading conditions (other than pressure/temperature, for example, see UG-22)
j) other pertinent information

Note: The owner shall sign such a document.

4.3.3 Most Relevant Inspection Report

a) The owner is responsible for determining the applicable and appropriate inspection and testing techniques.
b) The inspections and testing performed shall provide all relevant information for determining the condition of the vessel and may be used as part of the Fitness-for-Service assessment and development of the FFS alteration design.
c) The Inspection report must be accepted by the Owner.
d) The inspection report and its acceptance shall be documented and submitted as part of the design registration application.

4.3.4 Owner's Reasoning/Justification for Using the Fitness-for-Service Assessment

a) This may be formatted as a written document and is needed in order to provide details of the owner's proposed reasoning/justification for using Fitness-for-Service assessment (as part of the FFS alteration design).
b) The rationale shall be based on valid technical and safety considerations.
c) The rationale shall provide for an alternative equivalent level of personnel, property, and environmental safety.
d) The rationale shall clarify why this would be a better option than repairing, re-rating, or replacing the pressure equipment.
e) The rationale shall provide for an acceptable level of integrity for safe operation of pressure equipment subject to the Fitness-for-Service assessment (as part of the FFS alteration design).

Note: Such a document shall be signed by the owner.

4.3.5 Fitness-for-Service Assessment

It is intended that the Fitness-for-Service assessment document is based on the API 579-1/ASME FFS-1 (latest Edition) Fitness-for-Service Standard. In this Fitness-for-Service Standard, the engineer will find detailed procedures for evaluating many different types of flaws and damage mechanisms. As discussed elsewhere in this document, the FFS assessments described in the API 579-1/ASME FFS-1 can indicate whether the pressure equipment may be suitable for continual service with the current operating conditions.

Continual service may be permissible, subject to conditions and provided suitable monitoring, inspection, and other safety related programs are established. If the FFS assessment indicates that the equipment is not suitable for the current operating conditions, then the equipment shall be re-rated, repaired, or retired (removed from service).

API 579-1/ASME FFS-1 is organized around flaw types and damage mechanisms. The engineer shall take into consideration the damage noted by the inspections and consider the appropriate flaw type(s). Furthermore, active and ongoing damage mechanisms shall be determined based on both prior operation and future planned operation of the pressure equipment. All identified damage mechanisms and associated failure modes shall be considered in the assessment. The inspection type used shall be appropriate and capable of accurately categorizing the damage mechanism and measuring the extent of damage.

4.3.5.1 FFS Assessment Procedure

The general approach to performing an FFS Assessment is described in API 579-1/ASME FFS-1 (latest Edition) in Part 2, §2.1.3. The general outline of that section is listed below with some additional commentary. The engineer is advised to refer to the details in the Fitness-for-Service Standard. All applicable steps shall be followed and included in the documentation.

a) STEP 1 — *Flaw and Damage Mechanism Identification*
b) STEP 2 — *Applicability and Limitations of the FFS Assessment Procedures:* The applicability and limitations of an analysis procedure are stated relative to the level of assessment. If the assessment procedure indicates that it is appropriate for components not in creep service, then the limits in Table 4.1 of API 579-1/ASME FFS-1 (latest Edition) shall be used to make that determination.
c) STEP 3 — *Data Requirements:* Data requirements specific to a damage mechanism or flaw type are covered in the Part of API 579-1/ASME FFS-1 (latest Edition), which contains the corresponding assessment procedures. All NDE reports shall be included in the documentation. It is the engineer's responsibility to ensure that the inspection data used is suitable for the assessment performed, as described in each Part.
d) STEP 4 — *Assessment Techniques and Acceptance Criteria:* Three levels of assessment are provided in each part. The level of conservatism in the evaluation techniques decrease for Level 2 and Level 3 analysis as a result of the requirements of a more detailed inspection and more sophisticated evaluation methods.

    i. *Level 1 Assessment:* The assessment procedures included in this level are intended to provide conservative screening criteria that can be utilized with a minimum amount of inspection or component information.
    ii. *Level 2 Assessment:* The assessment procedures included in this level are intended to provide a more detailed evaluation that produces results that are more precise than those from a Level 1 assessment. In a Level 2 assessment, inspection information similar to that required for a Level 1 assessment is needed; however, more detailed calculations are used in the evaluation.

iii. *Level 3 Assessment:* The assessment procedures included in this level are intended to provide the most detailed evaluation, which produces results that are more precise than those from a Level 2 assessment. In a Level 3 assessment, the most detailed inspection and component information is typically required, and the recommended analysis is based on numerical techniques, such as the finite element analysis (FEA), or experimental techniques (when appropriate). Failure modes listed in §2D.1.4 of API 579-1/ASME FFS-1 (i.e. plastic collapse, local failure, collapse from buckling, creep or creep-fatigue damage, fatigue damage)shall be analyzed using the assessment procedures provided, with the associated margins described. When numerical techniques such as FEA are used, ABSA document AB-520 shall also be followed.

e) STEP 5 — *Remaining Life Evaluation:* Remaining life estimates typically fall into one of the following categories:

   i. *Remaining Life Can Be Calculated with Reasonable Certainty*
   ii. *Remaining Life Cannot Be Established with Reasonable Certainty*
   iii. *There Is Little or No Remaining Life*

f) STEP 6 — *Remediation*
g) STEP 7 — *In-Service Monitoring:* In-service monitoring is used to assess damage growth and reassess the remaining life. Where the degradation rate is uncertain, frequent in-service monitoring would be required.
h) STEP 8 — *Documentation:* In addition to the documentation requirements listed in API 579-1/ASME FFS-1 (latest Edition), the requirements of this document shall also be followed.

4.3.5.2 FFS Acceptance Criteria

The acceptance criteria list in §2.4.2 of API 579-1/ASME FFS-1 (latest Edition) shall be followed, as applicable. The descriptions below are supplementary to those provided in API 579-1/ASME FFS-1. Each of the FFS assessment methodologies presented in API 579-1/ASME FFS-1 utilizes one or more of the following acceptance criteria.

a) Allowable Stress: The allowable stress is typically a function of the original Code of Construction. The Edition and Addenda of the original code of construction shall be used to determine the allowable stress.

Note: Some specific materials have lower allowable stress values today than per original code of construction. Special consideration and appropriate values of allowable stress shall be used in such situation.

b) Remaining Strength Factor: The allowable remaining strength factor (RSFa) that can be used for an assessment shall not be less than 0.9.
c) Failure Assessment Diagram: The Failure Assessment Diagram (FAD) is used for the evaluation of crack-like flaws in components. The recommended minimum allowable value for the in-service margin is set at 1.0.

4.3.5.4 Competency

The owner is responsible for ensuring that the engineers, technologists, and technicians performing the inspection and engineering assessments are suitably competent.

As Part of the Owner's Statement in 4.3.9 in this document, it is required to include a statement accepting the competence of the engineers, technicians, and technologists performing the inspection and engineering assessments.

4.3.5.5 Certification

The final engineering Fitness-for-Service Assessment document (as detailed in the above paragraphs in 4.3.4 of this document) shall be certified/stamped by a Professional Engineer.

4.3.5.6 Risk Assessment

The owner shall provide a comprehensive and systematic process of evaluating all potential risks to people, environment, and property that may be affected as a result of operating the pressure equipment.

The following questions should be considered (but not be limited to) in the Risk Assessment:

a) How are (will) the operating conditions (be) controlled?
b) Which operating transients occurred in the past, and how have they affected the damage mechanisms?
c) How may a potential failure of other equipment affect the normal operation of the pressure equipment in question?
d) How will the owner address the responsibility for establishing the criteria for retiring pressure equipment?
e) What are the permanent resolution plans?
f) What is the confidence level in the inspection performed?
g) Were the best suitable techniques and competent technicians selected?
h) What are the consequences of failure?
i) What is the potential to introduce new failure modes or damage mechanisms?

The owner shall provide a summary risk assessment document and a statement that they accept the risk related to continual operation of pressure equipment subject to the FFS alteration. The summary document should describe the probability, consequences, and mitigations of a potential failure of the pressure boundary.

4.3.6 Root Cause Analysis or Damage Mechanism Identification

This is a documented investigation performed to determine the reason for deterioration in order to identify the damage mechanism or root cause, as required.

When mitigation of the damage mechanism is to be implemented, the root cause shall be determined.

The root cause or damage mechanism analysis report shall be submitted as part of the Design Registration Application. This report shall be accepted by the owner.

4.3.7 Monitoring and Maintenance Plan

A detailed maintenance and monitoring plan of the pressure equipment shall be developed, documented, and supplied to ABSA.

Elements to be addressed shall include (but not be limited to) the following:

a) defined frequency and extent of intermittent inspections or recordings
b) process monitoring
c) record keeping
d) inspection techniques

4.3.8 Action Plan and/or Mitigation Procedures

A detailed Action Plan and/or Mitigation procedure regarding the damage mechanism shall be developed, documented, and submitted to ABSA.

a) It is required that a documented Action Plan be implemented by the owner to address the planned activities for re-evaluating the damage mechanism, monitoring deterioration, and other pertinent activities.
b) When mitigation of the damage mechanism is to be implemented, a detailed Mitigation Procedure is developed that documents all planed activities for eliminating or reducing the effects of the damage mechanism to acceptable levels.

4.3.9 Contingency Plan or Emergency Operating Procedures

A contingency plan for dealing with any unexpected safety situations shall be developed. Included in the plan shall be a description of the operational steps to bring the equipment to a safe state (e.g., shutdown, pressure reduction) in the event that an unanticipated failure or other safety hazards of the operating of the equipment occurs. It shall be considered a failure if the pressure equipment is a credible risk scenario. The owner-user of the pressure equipment may have emergency operating procedures for credible risk scenarios, and those may be complex internal operating procedures. The owner is responsible for reviewing the existing emergency operating procedures as well as confirming and accepting that the already-existing emergency operating procedures are sufficient for managing the risks.

The owner may do one of the following:

a) The owner can develop a specific Contingency Plan. The summary of the Contingency Plan shall be submitted and include a statement of the commitment from the owner.
b) Optionally, rather than submitting a specific Contingency Plan a statement can be included in the owner’s statement that indicates they have existing emergency operating procedures

that are sufficient for managing credible risks associated with the subject pressure equipment.

4.3.10 Timeline and plan for permanent resolution

a) The owner shall prepare and provide a documented, detailed timeline and plan for repair or re-rate of the pressure equipment, subject to the FFS alteration. This shall be based on a reasonable and acceptable pre-defined period of time.
b) If there is an acceptable justification for not performing a repair or re-rate, this shall be documented and submitted as part of the design registration application.

4.3.11 Owner's Statement

The owner shall provide to the ABSA SCO-Design surveyor a separate letter of statement. It is recommended this to be on the owner's letterhead, acknowledging the owner's responsibility for the FFS alteration. As an alternative, this may be provided as a cover letter for the entire documentation application or a summary form as developed by the owner or ABSA.

The letter should include statements and information to the following intent:

a) The owner accepts the FFS alteration and all risks associated with it.
b) The owner attests to the competence of the engineers, technicians, and technologists performing the inspection and engineering assessments.
c) The owner takes full responsibility for ensuring safe operation of the subject pressure equipment and to develop, implement, and adhere to all plans, procedures, and activities as necessary, in accordance with this document, the registered design, and PESR.
d) The title and the position of authority (within the Owner Management System) of the person signing the document shall also be included.

4.4 Survey and registration of FFS Alteration Procedure

Based on the design registration application, the ABSA SCO-Design surveyor may consider registration of the design of the FFS Alteration Procedure.

Following the survey ABSA SCO-Design surveyor may do any of the following:

a) accept the proposed design as submitted

b) accept the proposed design with modified conditions
c) reject the proposed design and provide reasons for rejection

5.0 RECORD KEEPING

a) The owner shall keep the record for any use of the FFS Alteration Procedure and a detailed FFS assessment until the pressure equipment is permanently repaired, re-rated, or removed from service.

b) The records shall be available during ABSA audits.

Note: The FFS Alteration record shall include all pertinent documented information as required per API 579-1/ASME FFS-1 (latest Edition), this document, and PEIMS of the owner.

6.0 ANNEX (INFORMATIVE)

Continued Use of Pressure Equipment Subject to FFS Alteration limitations

When the owner considers that the continual use of the pressure equipment subject to the FFS alteration design and the limitation set in Par.3.2.2 of this document are reached, the owner may apply the following options:

a) Perform Repair or re-rate to the subject pressure equipment:
Repair/alteration design procedure registration with ABSA Design Survey using the AB 31 form may be required, under the condition the owner does the following:

a) provides all pertinent details for the design and repair/alteration (re-rate) activities
b) ensures a new AB-40 form is completed and signed by the ABSA SCO-Field Inspector

b) Re-evaluate the existing FFS alteration:
The existing, accepted FFS alteration design and FFS assessment is re-evaluated for the new circumstances and re-registered with ABSA Design Survey using the AB 31 form, under the condition that the owner does the following:

a) accepts responsibility for operating the equipment in a safe manner
b) demonstrates the capacity to comply with the pre-existing conditions and limitations
c) completes a new owner's statement, as required by this document
d) ensures a new AB-40 form is completed and signed by ABSA SCO-Field Inspector, if required.

c) Revise the FFS alteration:

The owner shall revise (modify) the existing FFS alteration design and register it with ABSA Design Survey using the AB 31 form, under the condition that the owner does the following:

a) accepts responsibility for operating the equipment in a safe manner
b) provides details for any new updates and modifications
c) demonstrates capacity to comply with the pre-existing conditions and limitations
d) completes a new owner's statement, as required by this document
e) ensures a new AB-40 form is completed and signed by ABSA SCO-Field Inspector, if required

d) Develop New FFS alteration:

New FFS alteration design is developed and registered with ABSA Design Survey using the AB 31 form, under the condition that the owner does the following:

a) complies with all requirements of this document
b) ensures a new AB-40 form is completed and signed by ABSA SCO-Field Inspector, if required

7.0 REVISION LOG

Edition #	Revision #	Date	Description
1st Edition issued 2018-06-27			