



The Technical Standards and Safety Authority
Boilers and Pressure Vessels Safety Program
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***GUIDE FOR MANUFACTURERS, FABRICATORS, INSTALLERS, REPAIRERS,
ALTERERS AND AUDIT TEAMS***

FOR THE

**ACCREDITATION OF OWNER/USER SELF-
INSPECTION REPAIR PROGRAM**

IN ACCORDANCE WITH:

- **CSA B51 – Boiler, pressure vessel and pressure piping code**
- **NBIC NB-23 Part 3 – Repairs and Alterations**

INTRODUCTION

This guide is prepared for the use of audit team leaders, members and applicants for TSSA Certificates of Authorization (C of A). It is not intended to replace or interpret the requirements of the CSA, NBIC, or the ASME Boiler and Pressure Vessel Codes. This guide does not list all the detailed requirements of the CSA, NBIC and ASME Codes referenced, but rather lists the highlights that the applicant is required to include in the written Quality Control (QC) Manual.

In addition, to assist the TSSA audit team, this guide is provided to applicants for their use in identifying and verifying the paragraph(s) where their QC Manual addresses all applicable control requirements of the CSA, NBIC and ASME Codes. The QC Manual must contain the description of the controls necessary for implementing the QC Program, but it is not required to contain all the programmatic requirements which will be found in the QC Program, such as written procedures.

The guide is based upon CSA B51, NBIC NB-23 Part 3 requirements. The guide is subject to revision by TSSA based on changes made to the CSA and NBIC Codes, from time to time, or based on feedback received from users.

An audit must cover a QC Manual and its implementation. It is recognized that the scope of work, QC Manual and Manual implementation will vary from one applicant to another, therefore, only those activities to be performed under the scope of an applicant's TSSA Certificate of Authorization are required to be addressed in the QC Manual. TSSA audit teams are advised that this guide may not outline all possible aspects of each audit. The QC Manual need not follow the format of this guide but shall described applicable requirements.

Questions of possible need for interpretation raised by the audit team members or the applicant shall be submitted to the TSSA Boiler and Pressure Vessel Chief Inspector for a resolution.

HOW TO USE THIS GUIDE

Review each item in the checklist against the QC Manual and:

- 1) Check the applicable column, "Yes", "No" or "N/A" (Not Applicable)
- 2) Note the paragraph number in the QC Program Manual which covers the subject addressed in the column labelled "Quality Program Reference".
- 3) Submit one copy of the completed checklist with one uncontrolled copy of the current QC Manual to TSSA Head Office for review, at least one month prior to the scheduled implementation audit date.

DEMONSTRATION OF THE QUALITY SYSTEM

The purpose of the demonstration item is to evaluate the applicant's Quality Control System (QCS) and implementation. For evaluation of the QCS, the applicant must demonstrate to the current Code rules sufficient administrative and construction of the QCS to show that they have the knowledge and ability to produce the Code items typical of those covered by the QCS.

A repair inspection job package shall be prepared in accordance with the Quality Control Manual. It shall demonstrate all elements of the program including non-destructive examination and heat treatment if required in the program. This may be on work in progress or on a demonstration item prepared specially for the survey.



QUALITY CONTROL SYSTEM CHECKLIST OWNER/USER SELF INSPECTION

Company Name: _____

Reviewed by: _____ Date: _____

No.	Quality Element and Sub-Elements	Yes	No	N/A	Quality Program Reference
1	GENERAL QUALITY CONTROL SYSTEM REQUIREMENTS				
	(a) The QCS is documented in detail in a QC Manual that addresses all requirements of the applicable Code Section and includes: (i) a cover sheet that contains the company name, physical address, and a brief description of the program scope(s) as it will appear on the requested Certificate(s) of Authorization. <small>(NOTE: The cover sheet may also contain the effective date of the QC Manual, mailing address, phone number or other information desired by the certificate holder or applicant.)</small>				
	(ii) a brief description of the work being accomplished under the Code or work the company wishes to accomplish under the code.				
	(iii) a Table of Contents page which includes each section by subject, number and revision number (as applicable).				
2	STATEMENT OF AUTHORITY AND RESPONSIBILITY				
	(a) The Statement of Authority and Responsibility shall include the following: (i) A statement that all work carried out by the applicant meets all applicable Code and Jurisdictional requirements.				
	(ii) The authority and responsibility of those in charge of the QCS are clearly established and documented.				
	(iii) Persons performing QC functions have sufficient and well-defined responsibility, the authority and the organizational freedom to identify QC problems and to initiate, recommend, and provide solutions, including stop work orders if further processing would result in a non-conformance with the applicable Code section.				
	(iv) A statement that all disagreements in the implementation of the QCS is referred for resolution to a higher authority in the company.				
	(v) The Statement of Authority and Responsibility is signed and dated by a senior company official responsible for Code activities (i.e. President, Vice President, Plant Manager, etc.)				
3	MANUAL CONTROL				
	(a) Manual revision control system (i.e. is the QC Manual revised by page or by section, are the controls clearly described?)				
	(b) The title of the individual responsible for revising the QC Manual.				
	(c) The title of the individual responsible for reviewing new NBIC/CSA Code Editions and making any required changes to the QC Manual within six months from the new Edition issue date.				
	(d) Provision for review and approval of the QC Manual to maintain it is current.				
	(e) Provision for submittal of the QC Manual revisions to the Authorized Inspector (AI) for acceptance prior to implementation including timely update of all copies to reflect approved revisions.				
	(f) In the case where the QC Manual exists in more than one language, at least one version is in English and identified as the authoritative version. In the case where the QC Manual exists in languages other than English, a statement by the C of A holder that the translation is correct shall be provided. <small>(NOTE: A glossary of terms is desirable from the standpoint of clarity and if abbreviated titles of personnel and control documents are used throughout the QC Manual.)</small>				



QUALITY CONTROL SYSTEM CHECKLIST OWNER/USER SELF INSPECTION

No.	Quality Element and Sub-Elements	Yes	No	N/A	Quality Program Reference
	(g) Provision for distribution of the revised QC Manual (controlled or uncontrolled), including hard copy and/or electronic controls.				
4	ORGANIZATION				
	(a) An organization chart showing the relationship between management, engineering, purchasing, manufacturing, production, field assembly, field construction, inspection, and quality control (as applicable) exists and reflects the actual organization. (NOTE: The purpose of this chart is to identify and associate the various organizational groups with the particular function for which they are responsible. The Code does not intend to encroach on the right to establish or alter whatever form of organization considered to be appropriate for Code work.)				
5	DRAWINGS, DESIGN CALCULATIONS AND SPECIFICATION CONTROL				
	(a) Procedures exist which assure that the latest applicable drawings, design calculations, specifications and instructions required by Code, as well as authorized changes, are used for repair, inspection and testing. Procedures include provisions for:				
	(i) The title of the individual responsible for the preparation and approval of the design calculations, drawings, procedures and specifications produced internally.				
	(ii) The title of the individual responsible for forwarding the design calculations, drawings, procedures and specifications to the repair organization.				
	(iii) The title of the individual responsible for procuring and reviewing the original Manufacturer's Data Report to ensure the repair methods are completed per the original Code of Construction.				
	(iv) The title of the individual responsible for computer aided design calculations and drawings. A detailed description of how this is verified to ensure the correct output has been obtained.				
	(v) The title of the individual responsible to ensure computer program revisions have been made within 6 months of Code revision changes. The verification process that ensures the revised program is producing the correct output is described.				
	(vi) The title of the individual responsible for the design registration with the appropriate jurisdictional authority and filing the registered designs upon request shall be described (if applicable).				
	(vii) The title of the individual responsible for the distribution of drawings, calculations, specifications, and the removal of all obsolete drawings, calculations and specifications.				
6	EXAMINATION AND INSPECTION PROGRAM				
	(a) Fabrication operations, including examinations and test procedures are described in sufficient detail to permit the Owner/User Inspector to determine at what stages specific inspections are to be performed. Specifically:				
	(i) Provisions for the use of checklists, process sheets, travelers, etc., for a list of examinations and tests to be performed and for designation of inspection points.				
	(b) Provisions exist that describes the interaction between the repair organization and the Owner/User Inspector, including approvals to start work, sign-offs of the repair and additional organization documents.				
	(c) Measures have been established to ensure:				
	(i) There is a process for contracting and control of services such as NDE, welding, etc. including those activities provided by other qualified certificate holders (if applicable). The use and control				



QUALITY CONTROL SYSTEM CHECKLIST OWNER/USER SELF INSPECTION

No.	Quality Element and Sub-Elements	Yes	No	N/A	Quality Program Reference
	of all other qualified subcontracted certificate holders that perform repairs shall be clearly described.				
	(ii) The title of the individual responsible to review the subcontracted repair organizations credentials and certifications prior to initiating the repair.				
	(iii) All required NDE procedures and personnel are reviewed by the Owner/User Inspector prior to use.				
	(iv) All required welding procedures and welder certifications are reviewed for adequacy and registration by the Owner/User Inspector prior to use.				
	(v) All required PWHT procedures are reviewed by the Owner/User Inspector prior to use.				
	(vi) The Owner/User Inspector witnesses any required testing completed by the repair organization including the pressure test.				
	(d) Provisions exist for the Owner/User Inspector to request the repair organization to raise non-conformances detected during inspections and to review and accept any dispositions.				
	(e) The title of the individual responsible for the preparation of the Owner/User Data Report completed by the repair organization. The report shall be reviewed for correctness and certified by the individual accepting the workmanship on behalf of the company.				
7	CALIBRATION OF MEASURING AND TEST EQUIPMENT				
	(a) A procedure exists for the calibration of examination, measuring, and test equipment used in fulfillment of applicable Code requirements.				
	(b) Measures are established to ensure that:				
	(i) Calibration records are maintained and that status indicators are used to indicate the current calibration status of the equipment.				
	(ii) Calibration equipment is maintained in good condition, checked for signs of damage, and removed from service if found defective.				
	(iii) A calibration frequency is established and maintained, and results are traceable to National Standards.				
	(iv) When calibrations are performed in-house, the title of the individual responsible is identified and procedures are established.				
8	RECORDS RETENTION				
	(a) The title of the individual responsible for maintaining the documents outlined below for a period as required by the Code of Construction: (i) Owner/User Data Reports (ii) Other or Original Manufacturer's Data Reports (iii) Manufacturer's drawings/registration documents (iv) Design calculations (v) Checklists, process sheets, travelers, etc., (vi) Material test reports and/or material certifications (vii) Pressure parts documentation and certifications (viii) Welding Procedure Specifications and Procedure Qualification Records (ix) Welder Qualification Records (x) Calibration records (xi) Non-Destructive Examination reports (xii) Repair procedures and records (xiii) Heat treatment records and test results (xiv) Non-conformances and dispositions (xv) Pressure test records (xvi) Any other applicable documentation				



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	(b) The title of the individual responsible for maintaining a numbered log with no skips or gaps of all regulated repairs and the status of each repair.				
	(c) The title of the individual responsible for making any records available to the TSSA representative as requested.				
	(d) Provisions exist for the Owner/User Inspector to maintain an Inspector Diary per NB-263.				
9	TRAINING AND QUALIFICATION OF OWNER/USER INSPECTION PERSONNEL				
	(NOTE: Owner/User Inspectors may be under contract by the company, provided the following is complied with, and the company assumes all responsibility for the Inspector and addresses the controls for contracted Inspection Personnel in the QC Manual)				
	(a) The title of the individual responsible to ensure the Owner/User Inspector engaged in the inspection of repairs are certified by the Owner/User Organization in accordance with this guideline.				
	(b) The title of the individual responsible for providing each Owner/User Inspector with a unique identification number.				
	(c) The title of the individual responsible for ensuring the Owner/User Inspector engaged in the inspection of repairs are knowledgeable and qualified within the scope of the repairs to be conducted.				
	(d) The Owner/User Organization has established a documented in-house training program to control the certification and continued proficiency of Owner/User Inspectors.				
	(e) At a minimum, Owner/User Inspectors shall be trained in the following: (i) The requirements and responsibilities of the QC Manual and the applicable ASME Codes. (ii) Technical aspects and skills for the position held.				
	(f) Documented annual review of qualified personnel shall include: (i) Training records. (ii) Evidence of work performed. (iii) Monitoring job performance.				
	(g) The title of the individual responsible for maintaining training and personnel qualification records.				
10	SAMPLE FORMS				
	(a) Forms used to control functions relative to quality are included within the QC Manual and their use explained in the text of the QC Manual.				