

**BOILERS AND PRESSURE
VESSELS SAFETY DIVISION**

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ACCREDITATION OF INSPECTION AGENCIES

PART 2

**Qualifications and Duties for TSSA Accredited Inspection Agencies,
Inspectors and Supervisors**

1. THE ACCREDITED INSPECTION AGENCY

1.1 QUALIFICATIONS

An Accredited Inspection Agency is an Agency acceptable to TSSA.

1.2 DUTIES

An Inspection Agency shall perform the following duties:

- (a) Participate in the TSSA surveys of all organizations for which they provide Authorized Inspection.
- (b) Provide Inspectors to monitor construction¹ in accordance with CSA N-285.0 and/or CSA B-51.
- (c) Maintain qualified Supervisors to monitor the performance of the Inspectors and to audit the activities at shops and field sites for which inspection agreements have been made.
- (d) Give written notice to all Inspectors of the name, office addresses, and phone numbers of the respective Supervisors.

¹ *Construction*, as used in this document, is an all-inclusive term comprising materials, design, fabrication, examination, testing, inspection, and certification required in the manufacture and installation of items.

- (e) Assure proper execution of responsibilities. In particular, the Agency shall:
- (i) establish and implement an internal program which shall provide assurance that those of its employees holding the positions of Supervisor and Inspector perform work in accordance with the requirements of this document. This program shall be documented by written policies, procedures, or instructions and shall be carried out throughout the term of the TSSA Certificate of Accreditation. The program shall provide for indoctrination and training of personnel performing such activities, as necessary, to assure that suitable proficiency is achieved and maintained.
 - (ii) provide instructions in writing to all Inspectors and their Supervisors, specifying their respective duties and responsibilities.
 - (iii) provide instructions in writing to all Inspectors requiring them to immediately contact their Supervisor whenever the Inspector is unable to readily resolve any question concerning Code and Standards compliance, manufacturing procedure, or quality assurance provision or its implementation. Instructions should be included as a reminder to the Inspector that he has the authority and the duty to refuse to sign any Data Reports involving nonconformance with the applicable Codes and Standards.
 - (iv) conduct annual planned audits of activities performed by the Supervisors to verify compliance with the provisions of this document. The audit shall be performed by appropriately trained personnel, in accordance with a written procedure or checklist. Audit results shall be documented and reviewed by management. Follow-up action, including reaudit of deficient areas, shall be taken where indicated to assure that necessary corrective action is completed.
- (f) Provide certification for each Inspector and Supervisor to be performing work under the provisions of the applicable Codes and Standards, to assure that the Inspectors and Supervisors meet the required experience and training requirements of this document. Certification and documentation of qualifications shall be made available for review by the TSSA Survey Team, upon request.

2. THE INSPECTOR SUPERVISOR

2.1 QUALIFICATIONS

The Supervisor shall be selected and designated as such by his employer.

To be considered for certification a candidate shall have qualified as an Inspector and shall satisfy one of the following requirements:

- (i) graduate of a 4 year accredited engineering or science college or university, plus 5 years experience in quality assurance, including testing or inspection (or both) of equivalent manufacturing, construction, or installation activities for pressure retaining items. For Nuclear Supervisors, at least 2 years of this experience should be associated with nuclear facilities; or if not, the individual shall have training sufficient to acquaint him thoroughly with the safety aspects of a nuclear facility.
- (ii) high school graduate, plus 10 years experience in general quality assurance or engineering, or equivalent manufacturing, construction, or installation activities. Five years of this experience is required in quality assurance, including testing or inspection (or both) of equivalent construction and installation activities for pressure retaining items. For Nuclear Supervisors, at least 2 years of this experience should be associated with nuclear facilities; or if not, the individual shall have training sufficient to acquaint him thoroughly with the safety aspects of a nuclear facility.
- (iii) at least 5 years ASME Boiler and Pressure Vessel Code related work, which includes inspection under the provisions of the ASME Code Sections, I, III or VIII; supervision of such work prior to the establishment of these qualifications; administration of shop inspection service under the referenced Sections or experience in applicable Code related manufacturing or construction activities.

In addition, he shall have experience including the review of implementation of the manufacturer's QA Manual and Program and the resolution of corrective actions associated with the program.

2.2 DUTIES

The Supervisor shall perform the following duties:

- (a) Maintain a record of the manufacturer's shop and field sites where Inspectors assigned to him by his Inspection Agency for supervision are performing Code Inspection activities. He shall record the date of his visits to such locations when

related to his assigned supervisory duties.

- (b) Maintain a record of those Inspectors assigned to him and a description of their assignments.
- (c) Assist in maintaining the competency of the Inspectors through periodic arrangement of panel discussions of work-related topics; written communications of unique problems and their solution; informal question and answer discussion sessions, and other means he deems suitable. The Supervisor shall maintain documentation of such activities.
- (d) The Supervisor shall be responsible for the technical performance of the Inspector(s) assigned to him. He shall report in writing to his management significant nonconforming activities that are reported to him or that he has observed on the part of Inspectors following full investigation of such activities.
- (e) Audit the performance of each Inspector under his supervision on a planned and periodic basis. Each Inspector shall be audited at least once a year at one assigned non-nuclear location, and at least once a year at each assigned nuclear location. At the time of this audit, the Supervisor shall be accompanied by the Inspector. The audit shall include, but not be limited to, a check that the duties listed under 3.2 are being performed, and a check of the following:
 - (i) one item under construction or installation phase to assure implementation of the Quality Assurance Program;
 - (ii) travellers or process sheets accompanying items in the construction or installation phase to assure that these accurately represent and properly attest to the work, examinations, tests and inspections performed. Particular attention should be given to provision for hold points and sign-offs;
 - (iii) the manufacturer's Quality Assurance Manual to assure that changes, if any, in the Quality Assurance Program have been accepted by TSSA and have been properly incorporated in the Manual;
 - (iv) a review of nonconformances to assure that appropriate technical review has been provided and that corrective measures are adequate and timely;
 - (v) the manufacturer's record keeping procedure to assure traceability of any phase of work or nondestructive examination results as required by the ASME Code;
 - (vi) the Inspector's records or diary of inspection phases performed on identified items, with dates of the inspection activities noted.

- (f) The audit shall be recorded in writing and shall contain a written comment regarding the status of each item audited.
- (g) The Supervisor shall investigate and report in writing to his management significant observed or reported Code or Quality Assurance Program nonconformance by the manufacturer.

3. THE INSPECTOR

3.1 QUALIFICATIONS

An individual designated as an Inspector shall satisfy the requirements as defined by (a) through (g). Documentation of satisfactory completion of these requirements shall be maintained by the Authorized Inspection Agency employing the Inspector.

- (a) A National, State or Provincial Certification or acceptable equivalent.
- (b) A minimum of 1 year of diversified shop inspection experience in the construction of Code boilers or pressure vessels.
- (c) Demonstrated ability to perform shop and field inspections to the satisfaction of the Inspection Agency employing the Inspector.
- (d) Experience, knowledge and background consistent with the complexity of the assignment.
- (e) Knowledge of the applicable Sections of the CSA Standards and ASME Codes and Code Cases.
- (f) Knowledge and ability to evaluate and monitor QA manuals and field procedures including welding, NDE and postweld heat treatment.
- (g) Knowledge of the requirements of the maintenance of records.

3.2 DUTIES

The Inspector's duties include, but are not limited to, the following:

- (a) He shall verify that the manufacturer has the required TSSA Certificate of Authorization to construct the items contracted for. It is necessary to check the Certificate to make certain that it has not expired and to determine the scope of construction permitted under the terms of the Certificate.

- (b) He shall monitor the Quality Assurance Program and verify conformity.
- (c) He shall verify that the manufacturer has the necessary Code books, Addenda, and Code Cases for the work he inspects.
- (d) He shall verify that the Design Specification and Design Report, where required, are available, properly certified by Registered Professional Engineers in accordance with Code requirements, and that they are on file.
- (e) He shall verify that all material complies with the applicable Code requirements.
- (f) When it is necessary to cut the material into two or more pieces, he shall verify that the manufacturer's controls are such that responsible personnel transfer the identification in order to maintain traceability of the material.
- (g) He shall verify that the Certificate Holder's personnel are examining all cut edges, as required by the applicable ASME Code.
- (h) He shall verify that all welding procedures conform to the ASME Code Section IX and the applicable Code of Construction.
- (i) He shall verify that all welders and welding operators are properly qualified and that their qualification permits them to use the required procedures.
- (j) During construction, he shall verify that the welding controls permit only the use of qualified welding procedures and qualified welders and operators.
- (k) If welded repairs are found to be necessary during construction, he shall verify that only properly qualified procedures, welders and operators are used.
- (l) He shall verify that all required heat treatments have been performed and are properly documented.
- (m) He shall verify that required nondestructive examinations and tests have been performed by qualified personnel and that the results are properly documented and meet Code requirements. Nondestructive examination procedures and acceptance standards shall be in accordance with the applicable Code.
- (n) He shall perform the required inspections prior to closure for testing. He shall also witness hydrostatic or pneumatic tests.
- (o) He shall verify in all cases that the responsible representative of the manufacturer has signed the Data Report and verified it as correct before he signs it.
- (p) Prior to stamping, he shall verify to the best of his knowledge and belief that the item is in compliance with the applicable Code. He shall also verify that the

nameplate stamping is correct and that the nameplate has been properly attached.

- (q) He shall also inspect, where applicable, items that are reported on Data Reports and those that are constructed using methods other than welding.
- (r) He shall keep a bound (not looseleaf) record or diary of his activities and inspections made, detailing corrections and any other pertinent data that will be useful to him and his employer. Information to be recorded shall include a description of the item inspected, the type of observation made, the requirements that prompted the activity, and the results of inspection.

3.3 PERFORMANCE OF INSPECTOR'S DUTIES

The audit performed and documented by the Supervisor shall provide evidence of the satisfactory or unsatisfactory performance of the Inspector.