



Boiler Safety Bureau

111 Hillsborough Street
Raleigh, NC 27603

QUALITY MANUAL

THIS MANUAL IS INTENDED TO MEET THE REQUIREMENTS OF THE ASME AND THE NATIONAL BOARD CONCERNING AUTHORIZED INSPECTION AGENCY ACTIVITIES.

Original

QUALITY MANUAL

Table of Contents

	PAGE NUMBER
COVER PAGE	1
TABLE OF CONTENTS	2
1.0 PURPOSE AND SCOPE	3
2.0 CODES/STANDARDS AND TERMS	3
3.0 MANAGEMENT COMMITMENT AND ORGANIZATION	5
4.0 PROGRAM DESCRIPTION	9
5.0 DOCUMENT CONTROL	17
6.0 TRAINING	19
7.0 RECORDS CONTROL	20
8.0 CORRECTIVE AND PREVENTIVE ACTION AUDITS	21
9.0 AUDITS	22
10.0 EXHIBITS OF FORMS AND EXCEL WORKBOOK SCREEN SHOTS	24

Approved by:


Bureau Chief

Date:

4/19/2023

1.0 PURPOSE AND SCOPE:

The purpose of this quality manual is to establish and state the general policy governing the North Carolina Department of Labor, Boiler Safety Bureau's Quality Program for AIA activities. This manual defines management's arrangements for managing our operations and activities in accordance with the framework established by the ASME Boiler and Pressure Vessel Code, the ASME QAI-1, the National Board RCI-1, National Board NB-360 and the applicable Laws and Administrative Code of North Carolina.

Changes to this **quality manual** shall not be implemented until reviewed and approved by the Bureau Chief and accepted by the ASME.

The scope of this ASME Quality Program is for the Bureau to work as an Authorized Inspection Agency (AIA) in performance of AIA activities for new construction, and repairs and alterations, controlled from 111 Hillsborough Street, Raleigh, North Carolina 27603 with the mailing address 1101 Mail Service Center, Raleigh, North Carolina 27699-1101. The requirements stated in this manual apply to all operations and activities conducted by the Bureau which affect the forgoing stated work.

The scope of this Quality Program addresses our ASME Certificate of Accreditation, as follows, "Authorized Inspection Agency for performance of **inspection** activities controlled from the above location to cover Sections I, IV, VIII Divisions 1, 2 & 3, X and XII of the ASME Boiler and Pressure Vessel Code".

It is the responsibility of the Bureau Chief to implement and maintain this manual and to ensure all processes conform to these requirements. It is the responsibility of all Bureau employees having responsibilities defined in this Quality Program to follow the requirements of this program and to help strive for continuous improvement in all activities and processes of the Bureau.

2.0 CODES/STANDARDS AND TERMS:

2.1 The controlling Codes and Standards are*;

2.1.1 The Uniform Boiler and Pressure Vessel Act of North Carolina and the North Carolina Administrative Code

2.1.2 National Board RCI-1 Rules for Commissioned Inspectors

2.1.3 National Board NB-360 Acceptance of Authorized Inspection Agencies (AIA) Accredited by the American Society of Mechanical Engineers

2.1.4 The National Board Inspection Code (NBIC)

2.1.5 American Society of Mechanical Engineers (ASME) QAI-1; Qualifications for Authorized Inspection

2.1.6 The American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code; Sections I, IV, VIII-Div.1, VIII-Div.2, VIII-Div.3, X and XII and any referenced Code & Standards

* Unless otherwise specified, the current mandatory edition shall apply.

2.2 Terms and Definitions

- 2.2.1 AIA = ASME and NB-accredited Authorized Inspection Agency
- 2.2.2 AI = Authorized Inspector = An Inspector holding a National Board Authorized Inspector Commission that is qualified to perform inspections related to boilers and pressure vessels being constructed in accordance with the ASME Code.
- 2.2.3 AIS = Authorized Inspector Supervisor
- 2.2.4 BSB = The North Carolina Boiler Safety Bureau, or Bureau
- 2.2.5 Code = ASME Boiler and Pressure Vessel Code and/or National Board Inspection Code
- 2.2.6 Inspector = AI, RI as applicable
- 2.2.7 Management or Managers = The Bureau Chief, Assistant Bureau Chief and Supervisors in the Boiler Safety Bureau
- 2.2.8 National Board = The National Board of Boiler and Pressure Vessel Inspectors
- 2.2.9 NBIC = National Board Inspection Code
- 2.2.10 Program = Quality Program
- 2.2.11 RI= Repair Inspector = An Inspector holding a current & valid National Board Authorized Inspector or Inservice Commission with the “R” endorsement that is designated as such to perform inspections related to boilers and pressure vessels being repaired or altered in accordance with the National Board Inspection Code.
- 2.2.12 RIS = Repair Inspector Supervisor = A person holding a National Board Authorized Inspector or Inservice Commission with the “R” endorsement that is designated as such to perform inspections related to boilers and pressure vessels being repaired or altered in accordance with the National Board Inspection Code and has been designated a Repair Inspector Supervisor by the Bureau Chief or his designee.
- 2.2.13 Supervisor = AIS, RIS as applicable
- 2.2.14 CAP-22 = ASME Conformity Assessment Policy #22

3.0 MANAGEMENT COMMITMENT AND ORGANIZATION:

3.1 Management Commitment:

The Bureau provides services as an AIA according to the requirements of the ASME and the National Board. The Bureau has developed and implemented this quality program to describe the policy applicable to providing said inspection services. The Bureau Quality Policy:

- It is the policy of the Bureau to provide services that meet or exceed the Codes and Standards under which we operate as well as meeting or exceeding customer requirements. We accomplish this by adhering to our quality program and operational methods that recognize the safety of the citizens we serve as a primary goal and customer satisfaction as a very important secondary consideration.
- We strive to continually improve the effectiveness of our quality program by monitoring our performance against our established objectives and through leadership that promotes employee involvement. This concept represents the Bureau's commitment to quality and the increasing need to better serve the citizens of North Carolina and the larger international community where Code boilers and pressure vessels are distributed from this state.

Bureau personnel who affect this Quality Program are required to adhere to this program whenever performing related work. Bureau personnel have the freedom to:

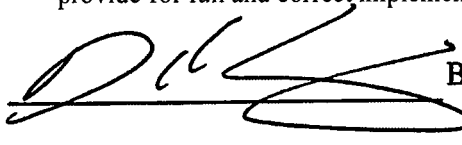
- Identify quality problems
- Initiate, recommend, or provide solutions to quality problems through designated channels.
- Verify implementation of solutions
- Assure that further processing, delivery, or use is controlled until proper disposition of a non-conformance, deficiency or unsatisfactory condition has occurred

As manager of the program, the Bureau Chief gives authority commensurate with their responsibilities, including the authority to stop work that does not conform to established requirements. This quality policy shall be communicated to all pertinent Bureau personnel.

Bureau personnel are required to safeguard the confidentiality of information obtained during inspection activities. The Bureau Chief shall cause Bureau personnel with responsibility defined in this Program, to acknowledge this responsibility by completion of the Confidentiality Letter. The Bureau Chief shall maintain those letters on file.

Matters that concern quality that cannot be resolved at normal interfaces, or conflicts arising from the interpretation of this program or its implementation, will be resolved by the Bureau Chief, in a manner that will not conflict with Code, QAI-1, National Board requirements, jurisdictional requirements or quality program requirements.

The North Carolina Department of Labor understands the importance of this quality program and how it affects the outcome of the work with which we are charged, they support Bureau personnel and unconditionally gives the Bureau Chief total control of the program to undertake any action necessary to provide for full and correct implementation.

 Bureau Chief Date: 04/19/2023

3.2 Organization and Responsibilities:

3.2.1 Bureau Chief:

- a) Is the senior manager responsible for this quality program.
- b) Is the approving authority for this quality program and subsequent revisions.
- c) May delegate authority to the Assistant Bureau Chief or Supervisors while maintaining responsibility.
- d) Shall submit proposed revisions of the quality manual to the ASME Conformity Assessment Department and the National Board for acceptance and shall ensure that the proposed changes have been accepted prior to implementation.
- e) May act as an AIS or RIS in accordance with this program, if in possession of National Board commission endorsement B or R as applicable and is so designated.
- f) Directly supervises the Assistant Bureau Chief.
- g) Is a member of the National Board of Boiler and Pressure Vessel Inspectors and the ASME Code Conference Committee.
- h) The Bureau Chief shall ensure that Bureau personnel have no commercial interest in, or shall be independent of, any part of an organization having direct commercial interest in the products to be inspected. The staff shall be free from any commercial, financial, and other pressures that might influence their judgment or the results of their work.
- i) The Bureau Chief shall notify the ASME Conformity Assessment department immediately should there be a change in qualification status, or on the Certificate of Accreditation, occurs.

3.2.2 Assistant Bureau Chief:

- a) Is responsible to perform the duties delegated by the Bureau Chief.
- b) Directly supervises the Supervisors.
- c) May act as an AIS or RIS in accordance with this program, if National Board commission is endorsed with the B or R as applicable and is so designated.
- d) Shall review the ASME Codes, QAI-1, NBIC, National Board RCI-1 and NB-360 for changes which mandate revisions to the quality program and training. Required changes to this Quality Program shall be approved by the Bureau Chief, accepted by ASME, and the National Board, and implemented within 6 months of the issue of QAI-1, Code, NB-360 or RCI-1. A review will be made as to whether additional training is required. This review shall be documented by memo archived in the records.
- e) Will monitor the corrective action and preventive action portion of the program.
- f) Seeks continuous improvements on procedures and processes.

- g) Works as the document custodian and maintains original and electronic file copies of this Manual and Forms.
- h) Is responsible for the upkeep of all records relating to the Quality Program.
- i) Will ensure that internal and independent audits of the Quality Program are conducted in their entirety, in accordance with 9.3.2 and 9.3.3.
- j) Reviews all AI and RI audits as assigned by the Bureau Chief.
- k) Audits AIS and RIS as assigned by the Bureau Chief.

3.2.3 Supervisors:

- a) Work as an AIS or RIS in accordance with this program, if National Board commission is endorsed with the B or R as applicable and is so designated.
- b) Are responsible to perform the duties described herein as AIS or RIS.
- c) Monitor and audit the performance of Inspectors with regards to inspections of Certificate Holders and audit ASME and National Board Code activities at shop and field sites.
- d) Directly supervise the Inspectors.
- e) Supervisors may act as an AI or RI in accordance with this program, if necessary. Supervisors performing any duties of an AI or RI shall be audited per 9.1.4 of this Manual. ***This activity*** will be documented on the Inspector-Supervisor Records in the Excel BSB QA General Workbook (Exhibit 10.14) ***by a notation in the comments column.***

3.2.4 Inspectors:

- a) Repair Inspectors are responsible to conduct repair and alteration inspections of boilers and pressure vessels in the state. Repair Inspectors shall monitor R-Certificate Holders' quality programs and conduct inspections of boiler and pressure vessel repairs and alterations in accordance with the National Board Inspection Code.
- b) AI's shall monitor ASME Certificate Holders' quality programs and conduct inspections of boilers and pressure vessels in fabrication in accordance with ASME and National Board RCI-1 requirements.
- c) A person may function as an AI or RI as long as that person has a current & valid Commission and endorsements required and has been designated. Their activities are subject to the required Inspector audits. Only personnel with the appropriate Commissions and endorsements will be assigned as the primary or back-up Inspector at shops and field sites.

3.3 Organization Chart:



4.0 PROGRAM DESCRIPTION:

- 4.1 The Bureau Chief will ensure that the Bureau is accredited by the ASME and accepted by the National Board for the purpose of providing AIA service and will notify the ASME Conformity Assessment Department not later than six months in advance of the expiration of the Certificate of Accreditation to schedule a survey for renewal. He shall also assist the ASME Survey Team during the accreditation survey.
 - 4.1.1 When requested by ASME, the BSB will perform follow-up activities on Certificate Holders that the BSB provides Authorized Inspection activities.
- 4.2 The Bureau Chief is responsible for the maintenance of inspection agreements for Authorized Inspection. He shall notify the ASME Conformity Assessment Department of new inspection agreements and all cancellations of inspection agreements. The Bureau Chief shall, on an annual basis, verify to the National Board that the audits required by QAI-1 have been completed.
- 4.3 As the AIA of record, the Boiler Safety Bureau shall perform all inspections at shop and field site locations as authorized in the scope of ASME Certificates of Authorization, except when the Boiler Safety Bureau cannot provide coverage for inspections at a specific field site. When the Boiler Safety Bureau cannot provide coverage for inspections at a specific field site, the Certificate Holder's Quality Control Program shall include the requirements of CAP-22.
- 4.4 The Bureau Chief shall ensure that the Inspectors and Supervisors are qualified and designated as required by QAI-1 and the National Board RCI-1. The Bureau Chief shall submit requests to the National Board for the commissions and endorsements required to conduct work in accordance with this program.
- 4.5 All **Inspectors** performing inspection service activities shall immediately notify their Supervisor regarding an inability to resolve a concern regarding Code compliance, manufacturing procedure, quality control provision, implementation, or personal safety. If the Supervisor is unavailable, the Inspector shall immediately contact the back-up Supervisor. If the back-up Supervisor is unavailable, the Assistant Bureau Chief or the Bureau Chief may be contacted to resolve the concern. Companies serviced in accordance with this program shall be given notice of this requirement.
- 4.6 All employees shall be given, in writing, the names, office and email addresses and office, cell and home telephone numbers of the Supervisors, Assistant Bureau Chief and Bureau Chief annually or when there are changes. This information is maintained on the Bureau Contacts in the Excel BSB QA General Workbook (Exhibit 10.16). This will be accomplished by the Assistant Bureau Chief distributing a current electronic copy of the Excel BSB QA General Workbook (Exhibits 10.14-10.19).
- 4.7 It is the policy of the Bureau Chief that each fabricated/constructed item shall require not less than the inspections required by the governing Code and should also include additional inspections, as necessary, to assure the Inspector that the minimum requirements of the Code are met. For items of complicated design or construction, additional inspection points shall be assigned as appropriate.
 - 4.7.1 The BSB will provide qualified Inspectors to monitor construction activities in accordance with ASME Code. Monitoring of ASME construction activities shall include a minimum of two visits by an Inspector.

4.8 AUTHORIZED INSPECTOR (AI):

4.8.1 *Qualifications:*

The prospective AI shall be designated by the Bureau Chief on the Indoctrination and Certification Record (Exhibit 10.01). The Indoctrination and Certification Record shall be completed by the Bureau Chief. An AI shall comply with the National Board RCI-1, and hold a valid National Board "AI" Commission and a valid North Carolina Commission. The Supervisor shall document training on the Inspector/Supervisor Training Record, (Exhibit 10.02), that covers the qualifications outlined in the following;

- a) Demonstrated ability to perform shop and field (on-site) inspections to the satisfaction of the Supervisor;
- b) Satisfactory degree of expertise, experience, knowledge and background for the inspection of boilers and pressure vessels *consistent with the complexity of the assignment*;
- c) Knowledge of applicable Sections of the ASME Code, Code Cases and reference codes and standards;
- d) Knowledge of quality assurance requirements, and shop and field procedures *and processes*;
- e) Knowledge and ability to evaluate and monitor shop and field procedures and performance;
- f) Knowledge of the requirements for the maintenance & retention of quality assurance records;
- g) A passing grade on an examination given by the National Board, covering knowledge of, and familiarity with the ASME Boiler & Pressure Vessel Code. The examination shall be graded by the National Board and results provided to the Bureau Chief.
- h) At least eighty (80) hours of diversified experience as an Inspector Trainee under the direct supervision of an AI *or AIS*.

4.8.2 Duties:

The AI is expected to perform all the duties required in ASME QAI-1, NB-RCI-1 and the applicable Code sections. Those duties include, but are not limited to the following;

- a) The Inspector shall make all inspections specifically required, and any such other inspections that are necessary, to certify that all boilers and pressure vessels the ASME certification mark will be applied to have been designed, constructed or repaired in accordance with the requirements of the applicable Section or NBIC as appropriate.
- b) The Inspector shall verify that the manufacturer or repair firm has a valid Certificate of Authorization covering the scope of its activities and is working to a Quality Control System.

- c) Verifying the Certificate Holder has a valid Certificate of Authorization to register with the National Board, if the items are to be registered.
- d) The Inspector shall monitor the entire Quality Control System at least annually and schedule such activity using an Inspector Monitoring Log (Exhibit 10.08). He shall verify that the system is adequate to ensure compliance with the applicable Code and that the Certificate Holder is adhering to its quality control system. He shall report the results to the Supervisor using a Monitoring Report (Exhibit 10.09).
- e) Verifying that any revisions to the Certificate Holder's quality program meet ASME BPV Code requirements before implementation.
- f) The Inspector shall verify that the Certificate Holder has the necessary Code sections and to cover the work being conducted. "R" certificate holders are required to have the complete current NBIC and have access to the ASME Code sections to be used.
- g) The Inspector shall verify that the applicable design calculations, drawings, specifications, instructions and any revisions are available, complete and accurately reflect the Code requirements for the work to be performed. For Section I, review a selected number of the Certificate Holder's design calculations to verify compliance with that Section.
- h) The Inspector shall witness all tests as required by Code.
- i) The Inspector shall verify that material is identified, documented, and remains traceable in accordance with the Certificate Holder's quality program and ASME BPV Code requirements. The Inspector shall review Material Test Reports and other materials documentation required by Code to ensure Code compliance.
- j) When the Certificate Holder's personnel cut material into two or more pieces, the Inspector shall verify that the controls provide a positive means of identification to maintain traceability of materials.
- k) The Inspector shall verify that the Certificate Holder's personnel are examining cut edges before welding.
- l) The Inspector shall verify that welding procedures and procedure qualification records conform to the applicable ASME and/or National Board Code Sections.
- m) The Inspector shall verify that welders, welding operators, brazers and brazing operators are properly qualified and that their qualification permits them to use the required procedures.
- n) The Inspector shall, as appropriate, verify that weld joint preparation is in compliance with design and welding documents and ASME BPV Code requirements.
- o) The Inspector shall verify completed welds comply with ASME BPV Code requirements.
- p) The Inspector shall verify that all required heat treatment and nondestructive examinations are performed using acceptable/approved procedures. Nondestructive examination procedures shall be demonstrated to the satisfaction of the Inspector.

- q) The Inspector shall verify nondestructive examination reports meet ASME BPV Code requirements.
- r) The Inspector shall accept the method and extent of required repairs and verify that material imperfections and weld defects repaired by welding were in accordance with the repair plan.
- s) The Inspector shall verify that required nondestructive examinations, ***heat treatment***, and other tests have been performed by qualified personnel and that the results are acceptable and are properly documented. The Inspector shall verify that only calibrated examination, measuring and testing equipment are utilized during construction, and that such equipment meets the requirements of the Certificate Holders Quality Program.
- t) The Inspector shall conduct a visual inspection of the vessel to confirm that the material identification numbers have been properly transferred and that there are no material or dimensional defects.
- u) The Inspector shall perform internal and external inspections and witness hydrostatic and pneumatic tests ***as required by Code***. The Inspector shall designate and perform inspections at stages of construction that will provide meaningful results to verify Code and Certificate Holders Quality Program requirements are being met.
- v) Prior to stamping, the Inspector shall verify that the item is in compliance with the requirements of the applicable Section. After stamping, verify that the stamping is correct and that any nameplate has been properly attached.
- w) The Inspector shall verify that the National Board “NB” symbol and National Board registration number are applied to any item registered with National Board.
- x) The Inspector shall verify that the responsible representative of the Certificate Holder has signed the Manufacturer’s Data Report or the NBIC report form and that it is correct. The Inspector shall sign the Manufacturer’s Data Report or the NBIC report form if, to the best of his knowledge and belief, the vessel is in compliance with all applicable requirements.
- y) The Inspector shall keep a bound (not loose-leaf) record or diary of activities, including monitoring and inspections made, detailing corrections and any other pertinent data that will be useful. Information shall be recorded daily or at each inspection and shall include a description of the item inspected, observations made, and the results of the inspection, the date of inspection, the Inspector’s initials or signature and National Board Commission number. ***The diary shall be available at the location of the inspection. For field sites, the diary must be available for the duration of the work. The diary shall be secured in such a way as to prevent revisions, additions, or deletions to entries which have been previously logged in the diary. Diary entries shall be made in such a way so that no information can be entered between previously entered text, lines or other information.***
- z) The Inspector shall contact the Supervisor for directions in resolving questions and concerns regarding ASME Code, NBIC and Quality Assurance Program compliance.

- aa) The Inspector shall thoroughly review new editions to the Code when issued and ensure that the Certificate Holder correctly implements the necessary controls or changes to assure compliance.
- bb) The Inspector shall verify all records are complete, accurate, maintained and retained as required by Code and the Certificate Holders Quality Program. The Inspector shall review and accept non-conformance dispositions and verify corrective actions were performed and closed in accordance with the Certificate Holders Quality Program.
- cc) The Inspector shall notify the Certificate Holder or repair organization, and the Supervisor, of any non-conforming condition at the time of discovery.
- dd) The Inspector shall participate in the audits at each location and shall verify the completion of any required corrective action, reporting such corrective action within the time frame specified by the Supervisor.
- ee) The Inspector shall attend the ASME and/or National Board review at each shop location assigned to him. When not possible or practicable, a substitute Inspector shall attend. It is not required for the Inspector to attend a review if the shop is inactive and the Supervisor is in attendance. An inactive shop is one that is applying for the initial Certificate issuance, or one that has not used its Certificate of Authorization since the last review.
- ff) The Inspector shall refuse to sign any Manufacturer's Data Report and/or National Board "R" Form, if the item is not in full compliance with the ASME or National Board Code.

4.9 AUTHORIZED INSPECTOR SUPERVISOR (AIS)

4.9.1 Qualifications:

The prospective AIS shall be selected and designated by the Bureau Chief on the Indoctrination and Certification Record (Exhibit 10.01). The Indoctrination and Certification Record shall be completed by the Bureau Chief or his designee. The Bureau Chief or his designee shall document training on the Inspector/Supervisor Training Record, (Exhibit 10.02), that covers the qualifications outlined in the following;

- a) Have qualified as an Authorized Inspector and subsequently shall have been engaged for at least two years in ASME Boiler & Pressure Vessel Code related work, such as inspection under the provisions of the ASME Code, or administration of shop inspection service under the ASME Code;
- b) Have passed an examination by the National Board and received a "B" endorsement from the National Board. The examination shall encompass sufficient means of determination of the candidate's ability to ascertain the validity and quality of the welding, nondestructive examination, and other quality control requirements of the ASME Boiler & Pressure Vessel Code. The National Board shall grade the examination and provide the results to the Bureau;

- c) Have knowledge of ASME shop review procedures, which shall include service with at least three shop review teams as a member or observer;
- d) Have knowledge of the requirements of the applicable ASME Code Sections, Code cases and reference Codes standards.

4.9.2 Duties:

The AIS is expected to perform all the duties required in ASME QAI-1, NB- RCI-1 and the applicable Code sections. Those duties include, but are not limited to the following:

- a) For shops to which they are assigned, maintain an electronic Shop Record in the Excel BSB QA General Workbook (Exhibit 10.15) for all shop and field sites where assigned Inspectors are conducting Authorized Inspection activities. This record shall contain the name and address of the certificate holders, certificate(s) for which each certificate holder is authorized and the expiration date of each, contact name and telephone number, assigned Inspector, back up Inspector and last review date.
- b) For themselves and the Inspectors who are assigned to them, maintain an electronic Inspector-Supervisor Record in the Excel BSB QA General Workbook (Exhibit 10.14). This record shall contain the name of the Inspector, Commissions and Endorsements held, shop assignments, last audit date, next audit due date, audit type and the shop name where the last appropriate audit was conducted.
- c) For shops to which they are assigned, the Supervisor shall maintain an electronic Supervisor Shop Activity Log in the Excel BSB QA Shop Activity Workbook (Exhibit 10.22). The Supervisor shall include the date and reason for each visit to such locations in the log and in the Inspector's diary.
- d) For shops to which they are assigned, the Supervisor shall maintain an electronic Shop Monitoring Log in the Excel BSB QA Supervisor Shop Monitoring Workbook Exhibit 10.21). This log shall contain the most current information as provided to them by the Inspector Monitoring Log (Exhibit 10.08), and will be maintained and filed by calendar year.
- e) Assist in maintaining the competency of the Inspectors to an acceptable level 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 on the Competency-Safety Training Record in the Excel BSB QA Training Workbook (Exhibit 10.23).
- f) Be responsible for the technical performance of assigned Inspectors. The Supervisor shall report in writing to the Bureau Chief, significant nonconforming activities that are reported to him or that he observed on the part of the Inspectors, following full investigation of such activities.
- g) Audit and document the performance of each AI assigned to an ASME Code shop or field site at least once each year at approximately twelve-month intervals and at additional times as requested by the AI. The Inspector/Shop Audit Checklist (Exhibit 10.04) shall be used to accomplish the audit. The audit shall verify that the AI is performing the duties outlined in 4.8.2. The audit shall be performed at a shop or field site, and the Supervisor shall be accompanied by the AI.

- h) An audit of each UM Certificate Holder activities, including qualification and certification of Certified Individuals per QAI-1, Part 8, ASME Section VIII, UG-117(a), and NB-383, shall be conducted at least once each year. The UM Audit Checklist (Exhibit 10.06) shall be used to accomplish the audit. The checklists and any associated reports shall be completed and filed by the end of the calendar year.
- i) The audits required above shall be recorded in writing on the UM Audit Checklist (Exhibit 10.06) and the record shall contain a written comment regarding the status of each item audited.
- j) Confirm the corrective action has been taken, verified, and accepted by the AI to assure compliance with the ASME Code requirements at the shops and sites that have been assigned to the Supervisor. Nonconformities shall be identified on the Corrective Action Request (Exhibit 10.10).
- k) Require that the Inspector maintains an Inspector Diary in accordance with section 4.8.2(y) of this Manual, and the Diary is made available for ASME reviews and investigations.
- l) The Supervisor shall attend the ASME and/or National Board review at each shop location assigned to him. When not possible or practicable, a substitute Supervisor shall attend. It is not required for the Supervisor to attend a review if the shop is inactive. An inactive shop is one that is applying for the initial Certificate issuance, or one that has not used its Certificate of Authorization since the last review.
- m) Ensure assigned Inspectors are provided safety training for hazards expected to be encountered in the carrying out of assigned duties. This is documented on the Competency-Safety Training Record in the Excel BSB QA Training Workbook (Exhibit 10.23).

4.10 REPAIR INSPECTOR (RI):

4.10.1 Qualifications:

The prospective RI shall be designated by the Bureau Chief on the Indoctrination and Certification Record (Exhibit 10.01). The Indoctrination and Certification Record shall be completed by the Assistant Bureau Chief or his designee. An RI shall comply with the National Board RCI-1 and hold a valid National Board "AI" or "IS" Commission with an "R" endorsement, and a valid North Carolina Commission. The Supervisor or his designee shall document training on the Inspector/Supervisor Training Record, (Exhibit 10.02), that covers the qualifications outlined in the following;

- a) Holders of an IS Commission: Eighty (80) hours on-the-job training in the inspection of repairs/alterations in accordance with the NBIC at either shop or field locations.
- b) Holders of an AI Commission: Forty (40) hours on-the-job training in the inspection of repairs/alterations in accordance with the NBIC at either shop or field locations.
- c) Satisfactory completion of the National Board Repair Inspector Course.

4.10.2 Duties:

The RI is expected to perform all the duties required in NB-RCI-1 and the applicable Code sections. Those duties may include but are not limited to those found in section 4.8.2 of this manual, as they apply to repairs and alterations.

In-process involvement for routine repairs may be waived in accordance with National Board RCI-1 5-3.10. The RI shall review documentation and verify NBIC requirements are met prior to signing the R-1 form for routine repairs.

4.11 REPAIR INSPECTOR SUPERVISOR (RIS):

4.11.1 Qualifications:

The prospective RIS shall be designated by the Bureau Chief on the Indoctrination and Certification Record (Exhibit 10.01). The Indoctrination and Certification Record shall be completed by the Assistant Bureau Chief or his designee. An RIS shall comply with the National Board RCI-1 and hold a valid National Board "AI" or "IS" Commission with an "R" endorsement, and a valid North Carolina Commission.

4.11.2 Duties:

- a) Provide training and development necessary to maintain the Repair Inspector's competency to complete the assigned duties.
- b) Maintain a record of each Repair Inspector(s) being supervised and a description of their work assignments.
- c) Document nonconforming activities (which includes violations).
- d) Audit and document the performance of each Repair Inspector being supervised. The audit shall be conducted at least once each year at approximately twelve (12) month intervals, or when requested by the Repair Inspector. The scope of the audit shall include, but is not limited to, a review of the Repair Inspector's performance of the duties described in paragraph 4.10.2. The requirement is waived for Authorized Inspectors performing inspections of repairs and alterations whose performance has been audited and documented in accordance with section 4.9.2(g). The Inspector/Shop Audit Checklist (Exhibit 10.04) shall be used to accomplish the audit.
- e) Confirm that the necessary corrective actions have been verified by the Repair Inspector to ensure compliance with NBIC requirements at repair/alteration locations including shops and field sites assigned to the RIS.
- f) Record, in the Inspector Diary, dates of all audits and all visits to shop and field sites when related to RIS duties.
- g)

5.0 DOCUMENT CONTROL:

5.1 General:

- a) This quality manual is intended to satisfy the ASME QAI-1, ASME and the National Board documentation requirements for a Quality Program;
- b) Bureau employees are encouraged to identify any additional documents needed to ensure the effective planning, operation and control of processes;
- c) Documents may be either electronic files or hardcopy documents.
- d) Documents requiring a signature for certification shall be written by hand.

5.2 Control of Documents:

5.2.1 The Quality Manual is controlled as specified herein.

- a) The Assistant Bureau Chief is responsible for the preparation of revisions, distribution and record retention;
- b) Revisions to the Quality Manual will be by revision and issuance of the entire manual. All changes to the Quality Program shall be approved by the Bureau Chief and require prior review and acceptance by the ASME and the National Board before implementation. ASME and National Board acceptance shall be documented by a letter to file in the QA files. Unless otherwise required, revised manuals shall be submitted to ASME and the National Board electronically. Manuals sent to ASME and the National Board by electronic means shall be identified and recorded as in (d) of this section.
- c) Only the current and accepted Quality Manual posted on the Bureau's intranet site shall be used. Note- Forms referenced in this Manual may be printed for use as worksheets for transfer of required information to the electronic Form.
- d) Printed copies of the Quality Manual are to be controlled copies and are identified on the manual cover page by a unique manual number. Printed controlled copies of the Quality Manual will be recorded in the electronic Quality Manual Issuance Log in the Excel BSB QA General Workbook (Exhibit 10.18). The Quality Manual that is posted on the intranet is locked and cannot be printed.
- e) The original hard copy signed and approved by the Bureau Chief will be maintained and controlled by the Assistant Bureau Chief.
- f) All Bureau personnel will be notified by email when a revision to the Quality Manual has been approved, accepted and placed on the intranet. The email announcement will be sent by the Assistant Bureau Chief. The Assistant Bureau Chief or his designee will monitor acknowledgement by all Bureau personnel by electronically recording in the QA Revision Log in the Excel BSB QA General Workbook (Exhibit 10.19). The QA Revision Log will contain the following information;

- The manual revision level and date of the revision;
 - The name of the recipient;
 - The date that an email announcement was sent;
 - The date that the email announcement was acknowledged by each recipient;
 - The name of the verifier.
- g) The latest changes to the Quality Manual will be signified by the section, subsection or text being italicized and bolded to indicate where changes have been made.

5.2.2 Forms:

The Forms that are used to implement the requirements of this Quality Manual will be controlled in the following manner:

- a) The Assistant Bureau Chief will maintain an electronic List of Forms (Exhibit 10.11).
- b) The List of Forms will include:
 - The title of the Form;
 - The Form number;
 - The title of the Excel BSB QA Workbook;
 - The revision level of the Form.
- c) The Assistant Bureau Chief will have the latest revision of each Form as indicated on the List of Forms (Exhibit 10.11) posted on the intranet.
- d) Bureau personnel shall ensure they are using the Form that is currently posted on the intranet.
- e) Changes to Forms which do not delete or change Code required information may be implemented without revising the Exhibits in this Manual. Manual Exhibits will be revised upon the next QA Manual Revision to include any changes. Revised Forms will be posted on the intranet, along with the revision level noted on Form 10.11. Notice will be sent to staff regarding the Form revisions.

6.0 TRAINING:

6.1 All persons who may *affect* quality within this program shall be indoctrinated and trained in the program. The indoctrination shall include individual reading of this Quality Manual, and discussion of the requirements of the applicable Codes and Standards.

6.1.1 The Bureau Chief or his designee shall document the indoctrination in the Indoctrination and Certification Record (Exhibit 10.01) and will be placed in the employees training file. The following information will be included in the documentation:

- Name of the employee;
- Name of the Supervisor performing the indoctrination;
- Date of the indoctrination;
- The revision level of the Quality Manual that was used;
- List of referenced Codes and Standards discussed.

6.1.2 The **Bureau Chief** shall provide instructions in writing to Inspectors and their Supervisors, specifying their respective duties and responsibilities through Indoctrination and Training as specified in this Quality Manual.

6.2 The Bureau Chief may modify specific training requirements on a case-by-case basis provided all Code and Standard requirements are met. The Assistant Bureau Chief shall be responsible for the following;

6.2.1 Training meetings shall be provided at least annually for the purpose of maintaining the competency of all Inspectors and Supervisors. Ensuring the Supervisor arranges for panel discussions of work-related topics; written communications of unique problems and their solution; informal question and answer discussion sessions, safety training and other means he deems suitable. The training will be documented electronically in the ASME Training & Competency Record in the Excel BSB QA Training Workbook (Exhibit 10.23) and contains at a minimum;

- The date of the discussion or written communication;
- The name of the supervisor or instructor;
- Type of training;
- The names of the participants;
- The topics that were discussed or communicated.

6.2.2 Training for Inspector and Supervisor Commissions and endorsements shall be in accordance with ASME QAI-1 and the National Board RCI-1. Each Inspector and Supervisor shall complete all required National Board continuing education training for their commissions and endorsements, and it shall be documented electronically in the National Board Online Training Record in the Excel BSB QA Training Workbook (Exhibit 10.24).

7.0 RECORDS CONTROL:

- 7.1 Records will be collected, stored, maintained, and disposed of as described herein. Storage of quality records will be in facilities that provide an environment to prevent damage, deterioration or loss. Electronic files listed on the List of Forms (Exhibit 10.11) will be maintained on the network “S” drive and be accessible to and editable by only the Chief, Assistant Chief, Supervisors and Administrative Specialist Supervisor. The electronic files may also be accessible to State and Department of Labor IT personnel for maintenance and planned back-ups. The Assistant Bureau Chief is responsible for maintaining a backup copy of all Quality electronic files. Electronic files are to be backed up at least once during each calendar month. Paper files will be maintained in the Boiler Safety Bureau office.
- 7.2 Records necessary to verify compliance with the QAI-1 Standard shall be maintained for a minimum of five years. Personnel qualification records necessary to verify compliance with the QAI-1 Standard shall be maintained for a minimum of five years after the individual ceases to provide AIA services.
- 7.3 The following records will be included as a minimum;
- Quality Manual Issuance and Revision Log
 - Supervisor Audit Checklist
 - Supervisor’s Shop Activity Log
 - Shop Record
 - Indoctrination and Certification Record
 - Supervisor Shop Monitoring Log
 - Monitoring Report
 - Inspector Diaries- *retain for a minimum of 5 years from the date of diary entry.*
 - Inspector-Supervisor Record
 - Inspector/*Shop* Audit Checklist
 - UM Audit Checklist
 - ASME QRR’s and Follow Up Records, *as applicable*
 - Corrective Action Request
 - **BSB** Audit Checklist
 - Attendance Sheet
 - **ASME** Training and Competency Records (e.g. exam results, NB training records, maintenance of competency, log of shop training, training checklist).
- 7.4 Records Disposition
- 7.4.1 Records may be disposed of after the time frame described in 7.2.

8.0 CORRECTIVE AND PREVENTIVE ACTION:

8.1 All personnel are responsible for the identification of nonconformities through the corrective and preventive action program and to take action to eliminate the causes of potential nonconformities in order to prevent their recurrence.

8.2 Corrective Action:

8.2.1 Nonconformities shall be identified on a Corrective Action Request (CAR) (Exhibit 10.10) by the initiator and presented to the Assistant Bureau Chief who will record the CAR on the electronic CAR Log in the Excel BSB QA General Workbook (Exhibit 10.17), and will assign a date for the CAR to be closed. The Assistant Bureau Chief will present the CAR to the Bureau Chief who will assign the CAR to the appropriate individual for corrective action.

8.2.2 Corrective actions shall be appropriate to the nonconformities encountered.

8.2.3 *The corrective action request form shall include:*

- a) *Description of condition.*
- b) *Causes of nonconformities.*
- c) Evaluating the need for preventive action to ensure that nonconformities do not recur.
- d) Determining and implementing corrective action needed.
- e) Management acceptance of corrective action taken.

8.2.4 The Bureau Chief will review the completed Corrective Action Request and if acceptable, he will sign, date and forward it to the Assistant Bureau Chief for filing.

9.0 AUDITS:

9.1 Supervisor:

- 9.1.1 Required annual audits of each Supervisor shall be conducted by appropriately trained personnel, trained in the requirements of this Quality Program and the Supervisor's duties and responsibilities. This audit shall be performed using the Supervisor Audit Checklist (Exhibit 10.05) and presented to the Bureau Chief for review.
- 9.1.2 Deficiencies identified during the audit shall be documented on a Corrective Action Request (Exhibit 10.10). Required resolution shall be specified and shall be verified that such resolution has been completed within the specified period.
- 9.1.3 The annual RIS audit requirement is waived for an AIS whose Authorized Inspector Supervisor performance has been audited and documented in accordance with this Section.
- 9.1.4 Any AI or RI duties performed by a Supervisor shall be audited by appropriately trained personnel, trained in the requirements of this Quality Program and the Inspector duties and responsibilities and must be an AIS/RIS. The Inspector/Shop Audit Checklist (Exhibit 10.04) shall be used to accomplish the audit.

9.2 Inspector:

- 9.2.1 Supervisors shall conduct required audits of Inspectors per 4.9.2(g) of this manual.
- 9.2.2 When auditing an assigned Inspector and location, an entrance meeting will be held by the Supervisor. The purpose of the meeting is to explain the audit agenda and to meet appropriate company representatives.
- 9.2.3 At audit completion, an exit meeting will be held. This meeting will be used to describe the findings of the audit and allow for additional comment by management.
- 9.2.4 When audit entrance and exit meetings are held, an Attendance Sheet (Exhibit 10.03) shall be used.
- 9.2.5 Nonconformities identified on the Inspector shall be documented on a CAR. For nonconformities of the Certificate Holder, the CAR will be presented to their contact and input into the Certificate Holder's corrective action system. Supervisors shall report results of Inspector audits, in writing, to the Bureau Chief.

9.3 Quality Program and QA1-1 Requirements:

- 9.3.1 A comprehensive system of planned and periodic audits shall be carried out to verify compliance with the requirements of QAI-1, NB-RCI-1 and this quality program.
- 9.3.2 The Assistant Bureau Chief shall be responsible to conduct an annual internal audit of the entire Quality Program using the BSB Audit Checklist (Exhibit 10.12). The internal audit should be conducted during the last quarter of each calendar year. The audit results shall be documented on the BSB Audit Checklist and presented to the Bureau Chief for review.

- 9.3.3 An annual independent audit shall be conducted using the Quality Manual and BSB Audit Checklist (Exhibit 10.12), by an individual that is appropriately trained, and who has no responsibilities in the areas being audited. The Bureau Chief is responsible for identifying and approving independent auditors by reviewing the prospective auditors training. Documentation of the auditors training and approval shall be maintained in the QA files. The independent audit should be conducted during the first quarter of each calendar year. The audit results shall be documented in a report, along with the completed BSB Audit Checklist (Exhibit 10.12) and presented to the Bureau Chief for review.
- 9.3.4 Follow-up action including the issuance of CAR's and the re-audit of deficient areas shall be taken where necessary for both the internal and independent audits by a person designated by the Bureau Chief.
- 9.3.5 CAR's that are generated as a result of an independent audit shall be presented to the independent auditor for their acceptance of the description, corrective action and resolution.
- 9.3.6 The overall adequacy and effectiveness of implementation of the AIA program shall be reviewed on an annual basis by a team selected by the Bureau Chief. A memorandum shall be generated and presented to the Bureau Chief regarding the team's findings.

10.0 EXHIBITS OF FORMS AND EXCEL WORKBOOK SCREEN SHOTS

10.01 INDOCTRINATION AND CERTIFICATION RECORD

10.02 INSPECTOR/SUPERVISOR TRAINING RECORD

10.03 ATTENDANCE SHEET

10.04 INSPECTOR/SHOP AUDIT CHECKLIST

10.05 SUPERVISOR AUDIT CHECKLIST

10.06 UM AUDIT CHECKLIST

10.07 DELETED

10.08 INSPECTOR MONITORING LOG

10.09 MONITORING REPORT

10.10 CORRECTIVE ACTION REQUEST

10.11 LIST OF FORMS

10.12 BSB AUDIT CHECKLIST

10.13 DELETED

10.14 EXCEL BSB QA GENERAL WORKBOOK- INSPECTOR-SUPERVISOR RECORD

10.15 EXCEL BSB QA GENERAL WORKBOOK-SHOP RECORD

10.16 EXCEL BSB QA GENERAL WORKBOOK-BUREAU CONTACTS

10.17 EXCEL BSB QA GENERAL WORKBOOK- CAR LOG

10.18 EXCEL BSB QA GENERAL WORKBOOK-QA MANUAL ISSUANCE LOG

10.19 EXCEL BSB QA GENERAL WORKBOOK-QA MANUAL REVISION LOG

10.20 DELETED

10.21 EXCEL BSB QA SUPERVISOR MONITORING WORKBOOK

10.22 EXCEL BSB QA SUPERVISOR SHOP ACTIVITY WORKBOOK

10.23 EXCEL BSB QA TRAINING WORKBOOK- ASME TRAINING AND COMPETENCY
RECORD

10.24 EXCEL BSB QA TRAINING WORKBOOK- NATIONAL BOARD ONLINE TRAINING
RECORD

EXHIBIT 10.01-INDOCTRINATION & CERTIFICATION RECORD – FORM 10.01

Employee:

NC#

NB#

Training Type	Management Signature	Date
Initial Indoctrination		
Passed NC Jurisdictional Exam		
National Board "IS" Commission obtained		
QA Manual Revision #: Codes & Standards Discussed:		
Supervisor/Trainer:		
Repair Inspector		
"IS" Commission and 80 hours on-the-job training in repairs/alterations, or		
"AI" Commission and 40 hours on-the-job training in repairs/alterations		
National Board "R" endorsement obtained		
Designation by Bureau Chief		
Repair Inspector Supervisor		
Repair Inspector Supervisor Designation by Bureau Chief		
Authorized Inspector		
80 hours OJT with AI		
National Board "AI" Commission obtained		
Designation by Bureau Chief		
Authorized Inspector Supervisor		
2 years AI or administration experience		
3 shop reviews as a member or observer		
National Board "B" endorsement obtained		
Designation by Bureau Chief		

EXHIBIT 10.02- INSPECTOR/SUPERVISOR TRAINING RECORD – FORM 10.02

Employee:	NC#:	NB#:
Commission/Endorsement being evaluated: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> R		

Qualifications for AI commission, or R endorsement

1. The Inspector candidate for an AI commission and/or R endorsement shall demonstrate the ability to perform shop and field (on-site) inspections to the satisfaction of the supervisor.

Certificate holder:	Certificates held:
---------------------	--------------------

Document details of inspections performed by the candidate for AI commission and/or R endorsement below:

Characteristic 1 evaluated by:

Print Name	Signature	NB #-Commissions & Endorsements	Date

Use additional pages if needed

EXHIBIT 10.03-ATTENDANCE SHEET – FORM 10.03

[illegible]

*Use multiple pages if necessary

EXHIBIT 10.04-INSPECTOR/SHOP AUDIT CHECKLIST – FORM 10.04

FOLLOW-UP REQUIRED:	PURPOSE OF FOLLOW-UP:
Certificate Holder Name:	
Certificate Holder Mailing Address:	
Certificate Address (If different from Mailing Address):	
Audit Location Address (If Different from Certificate Address):	
Certificate Holder Phone No.	Contact Name, Title & E-Mail Address:
Inspector Name:	Auditor Name:
Audit Date:	Audit Type (Commissions/Endorsements):
Certificates:	

REF.#	ITEM EVALUATED	SAT.	UNSAT.	WRITTEN COMMENTS (comments must be provided for each item)
1.	Does the Inspector verify that the Certificate Holder is in possession of the applicable Certificates of Authorization?			
2.	Does the Inspector verify that the Certificate Holder is in possession of the applicable code books, including addenda?			
3.	Does the Inspector review and accept revisions to the QA/QC manual?			
4.	Does the Inspector adequately communicate areas of concern with the Supervisor?			
5.	Does the Inspector maintain his required knowledge of Code requirements by reviewing Code editions when issued?			

EXHIBIT 10.05-SUPERVISOR AUDIT CHECKLIST FORM 10.05

SUPERVISOR AUDIT CHECKLIST		
Supervisor:	NC#	NB#
Activities audited:		
Audit performed by:		Date:
1.	Does the Supervisor maintain a list of the shops and assigned Inspectors, and a description of assignments for each Inspector? Is the list correct and complete?	
2.	Does the Supervisor maintain a record of visits to shops and assigned Inspectors? Does the record include the topics of discussion?	
3.	Does the Supervisor assist in maintaining the competency of the Inspectors? Is this documented correctly?	
4.	Does the Supervisor ensure that monitoring by the Inspector at each assigned shop is being completed and documented? Are monitoring logs and reports complete with adequate detail?	
5.	Does the Supervisor perform the annual Inspector Audits as scheduled?	

EXHIBIT 10.06-UM AUDIT CHECKLIST – FORM 10.06

FOLLOW-UP REQUIRED Yes <input type="checkbox"/> No <input type="checkbox"/>		PURPOSE OF FOLLOW-UP:		
Client Name				
Client Mailing Address				
Certificate Address (If different from Mailing Address)				
Audit Location Address (If Different From Certificate Address)				
Client Phone No.	Client FAX No.	Contact Name, Title & E-Mail Address		
Auditor Name			Audit Date	
Quality Manual Edition & Revision			Date QC Manual signed by AI	
CI Name and Certificate Number			Date appointed	
Job Package Reviewed			Object Type	

Ref.#	ITEM EVALUATED	SAT.	UNSAT.	WRITTEN COMMENTS (comments must be provided for each item)
1.	How many "UM" vessels were fabricated since last AI monitoring visit?			
2.	How many "U" stamped vessels were fabricated since the last "UM" review? (NOTE: At least one item must be stamped with the "U" symbol.)			
3.	Verify application for "UM" renewal sent to ASME.			
4.	Review the Manufacturer's U-3 Certificates of Compliance			
5.	Are Certificates of Compliance (U-3) being prepared for each "UM" stamped vessel and signed by the Manufacturer?			
6.	Certificates of Compliance must be maintained for five (5) years [UG-			

INSPECTOR MONITORING LOG

EXHIBIT 10.08-FORM 10.08

This log shall be used to ensure complete and timely monitoring of the entire Quality Program of the Certificate Holder. Once the schedule has been established, it shall be retained with the Bound Diary in the event of a relief Inspector. Copies shall be submitted to the Supervisor. The schedule may be revised as required.

CERTIFICATE HOLDER:

PHYSICAL LOCATION:

CERTIFICATES

AND EXPIRATIONS:

ASSIGNED INSPECTOR:

MONITORING YEAR:

SECTION	DESCRIPTION	SCHEDULED	COMPLETED

EXHIBIT 10.09-MONITORING REPORT

FORM 10.09

In accordance with the provisions of the ASME QAI-1, National Board RCI-1, and the provisions of the inspections agreement between the Certificate Holder and the Bureau, the following section(s) of the Quality Program has/have been monitored by the Inspector. Any deficiencies identified must be resolved to the satisfaction of the Inspector, by the date specified herein.

CERTIFICATE HOLDER:
PHYSICAL ADDRESS:

CERTIFICATES AND EXPIRATIONS:
ASSIGNED INSPECTOR:
MONITORING YEAR:

SECTIONS MONITORED:

ITEMS MONITORED:

RESULTS: SATISFACTORY ☐ OR UNSATISFACTORY ☐

INSPECTOR:

DATE:

IF CORRECTIVE ACTION NEEDED;

CERTIFICATE HOLDER'S REPRESENTATIVE NOTIFIED:

CORRECTIVE ACTION TO BE TAKEN:

IS THE CORRECTIVE ACTION TO BE TAKEN ACCEPTABLE TO THE Inspector?

YES ☐ NO ☐

DATE TO BE RESOLVED BY:

VERIFICATION OF CORRECTIVE ACTION TAKEN:

INSPECTOR:

DATE:

EXHIBIT 10.10-CORRECTIVE ACTION REQUEST-FORM 10.10

INITIATOR'S NAME (PRINT):	
INITIATOR'S SIGNATURE:	
DATE OPENED:	ACTION NUMBER:
NONCONFORMITY <input type="checkbox"/>	IMPROVEMENT OPPORTUNITY <input type="checkbox"/>
DESCRIPTION OF CONDITION:	
ASSIGNED TO:	DATE ASSIGNED:
CAUSE:	
CORRECTIVE ACTION TAKEN:	
ACTION TAKEN TO PREVENT RECURRENCE:	
CA/PA RESOLVED BY:	
PRINT:	DATE RESOLVED:
SIGN:	DATE EFFECTIVE:
MANAGEMENT APPROVAL:	
PRINT:	DATE APPROVED:
SIGN:	

EXHIBIT 10.11-LIST OF FORMS- FORM 10.11

<u>TITLE</u>	FORM #	BSB QA Excel Workbook ("S" Drive)	Form Revision Level	Date of Revision
Paper or Electronic Records				
INDOCTRINATION & CERTIFICATION RECORD	10.01		3	10/25/2019
INSPECTOR/SUPERVISOR TRAINING CHECKLIST	10.02		4	10/25/2019
ATTENDANCE SHEET	10.03		2	01/31/2017
INSPECTOR/SHOP AUDIT CHECKLIST	10.04		4	03/25/2020
SUPERVISOR AUDIT CHECKLIST	10.05		5	03/25/2020
UM AUDIT CHECKLIST	10.06		4	03/25/2020
INSPECTOR MONITORING LOG	10.08		2	10/25/2019
MONITORING REPORT	10.09		3	10/25/2019
CORRECTIVE ACTION REQUEST	10.10		1	10/25/2019
LIST OF FORMS	10.11		8	03/25/2020
BSB AUDIT CHECKLIST	10.12		3	03/25/2020
Electronic Only Records				
INSPECTOR-SUPERVISOR RECORD		GENERAL		
SHOP RECORD		GENERAL		
BUREAU CONTACTS		GENERAL		
CORRECTIVE ACTION LOG		GENERAL		
QUALITY MANUAL ISSUANCE LOG		GENERAL		
QUALITY MANUAL REVISION LOG		GENERAL		
RADIATION EXPOSURE RECORD		GENERAL		
SUPERVISOR SHOP MONITORING LOG		(YEAR) SUPERVISOR SHOP MONITORING		
SUPERVISOR SHOP ACTIVITY LOG		SUPERVISOR SHOP ACTIVITY		
ASME TRAINING & COMPETENCY RECORD		TRAINING		
NATIONAL BOARD ONLINE TRAINING		TRAINING		

EXHIBIT 10.12- BSB Audit Checklist- FORM 10.12

FOLLOW-UP REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No		PURPOSE OF FOLLOW-UP:		
Client Name: North Carolina Department of Labor, Boiler Safety Bureau				
Client Mailing Address: 1101 Mail Service Center Raleigh, NC 27699-1101				
Certificate Address (If different from Mailing Address): 111 Hillsborough St. Raleigh, NC 27603				
Audit Location Address (If Different From Certificate Address): Same				
Phone No.: 919-707-7911	FAX No.: 919-807-2762	Contact Name, Title & E-Mail Address:		
Audit Date:		Audit Team:		
Date of review by Chief:		Signature of Chief:		
ASME: Certificate of Accreditation #AIA-007			National Board: Certificate of Acceptance	
Quality Manual Rev.#: Date Manual Issued:		Audit Scope & Requirements: Internal / Independent (circle one) audit of the Boiler Safety Bureau Staff functions for conformance to referenced Quality Program, The Uniform Boiler and Pressure Vessel Act of North Carolina and the North Carolina Administrative Code, ASME QAI-1 and National Board RCI-1 and NB-360.		

REF.#	ITEM EVALUATED	SAT.	UNSAT.	WRITTEN COMMENTS (comments must be provided for each item)
1.	Certificate Scope Appropriate for Activities Performed & Not Expired			
2.	Current Controlled Quality Manual Available with correct revision and acceptance. QAM 5.3.1 (Form 10.18 & 19)			

Exhibit 10.14

Screen Shot

Excel BSB QA General Workbook

Inspector-Supervisor Record

AutoSave BSB QA General Workbook - Excel Smith, Jeremy

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Clipboard Font Alignment Number Styles Cells Editing

H10 Last AI activities performed-

	A	B	C	D	E	F	G
	Authorized	Commissions & Endorsements	Shop-Primary/Backup	Last Audit Date	Next Audit Due	Audit Type (Nuclear/Non-nuclear)	Shop Where Last Audit Was Conducted
1	Danny Harrell	IS, AI, B, N, R	Edwards- Primary	5/1/2019	May-20	AI/RI (Non-nuclear)	Edwards
2	NB# 14427		Morris & Assoc.- Primary				
3	NC# 1612		Southern Ind.- Backup				
4	Jeremy Smith	IS, AI, B, N, R	GE Hitachi- Primary	3/27/2019	N/A	ANI/AI (nuclear & non nuclear)	GE Hitachi
5	NB# 15409		(eff. 12/30/2016-06/01/2019)				
6	NC# 1653		RIS- Southern Ind. Const. (eff.Dec.2018)	11/6/2019	Nov-20		
7			AIS/RIS- Edwards & Morris (eff.Aug.2019)				
8	Andrew Gunto	IS, AI, R	Not assigned	12/29/2015	N/A	AI (Non-nuclear)	Morris & Assoc.
9	NB# 12864						
10	NC# 1523						
11	Dean Johnson	IS, AI, B, N, R	IMS- Primary				
12	NB# 11766		Isometrics/FAI- Backup				
13	NC# 1358		Salisbury Machine- Primary				
14			AC Corp.- Primary	9/5/2019	Sep-20	AI/RI (Non-nuclear)	Ramco
15			Ramco- Primary				
16	Mark Hutchens	IS, AI, B, R	Buckeye- Backup	8/27/2019	Aug-20	AI (Non-nuclear)	Buckeye
17	NB# 12538						
18	NC# 1491						

Inspector-Supervisor Record Shop Record Bureau Contacts CAR Log QA Manual Issuance Log QA Manual Revision Log

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Exhibit 10.15

Screen Shot

Excel BSB QA General Workbook

Shop Record

	A	B	C	D	E	F	G	H	I	J	K
	Shop Name & Address	Phone#	Date Contracted	Primary AI	Backup AI	AIS/ANIS/RIS	Certificate(s)	Cert. Expires	Last Review	Shop Contact(s)	
1											
2											
3	Buckeye Fire Equipment	704-739-7415	11/26/2001	Snuffer	Hutchens	Davis	U #32300	12/22/2022	1/8/2019	Jim Sylvester	
4	110 Kings Rd.									jsylvester@buckeyef.com	
5	Kings Mountain, NC 28086									828-289-5878 Cell 704-739-7415 Wk.	
6											
7	Fabrication Associates	704-535-8050	7/22/1991	Snuffer	Johnson	Davis	U #10264	1/15/2022	11/13/2018	Paul Greene	
8	7900 Pence Rd.						PP #10263			prgreene@faif.com	
9	Charlotte, NC 29212						S #15488			704-535-1622	
10							R #985			980-355-2237-cell	
11											
12										Ben Greene	
13										704-560-3645-cell	
14											
15	IMS Fabrication	704-216-0255	2/24/2006	Johnson	Parker	Davis	R #7004	12/10/2021	10/25/2018	Joe Weiner	
16	150 Summit Park Dr.									joeweiner@imsfabrication.com	
17	Salisbury, NC 28146									704-216-2255	
18											
19	Isometrics	336-349-2329	7/22/1991	Parker	Johnson	Davis	U #21146	3/28/2022	1/29/2019	Sam Glass	
20	1266 N. Scales St.									sglass@isometrics-inc.com	
21	Reidsville, NC 27320									336-349-2320	
22											
23	Salisbury Machinery	704-855-1400	10/6/1999	Johnson	Parker	Davis	R #5620	7/11/2021	5/30/2018	Nickolas Agostini	
24	1325 Litton Dr.									nicolasagostini@micelin.com	
25	Salisbury, NC 28147									704-855-5134	

Exhibit 10.16

Screen Shot

Excel BSB QA General Workbook

Bureau Contacts

Contact	Office Phone	Cell Phone	Home Phone	Email	
Boiler Safety Bureau	919-707-7918	N/A	N/A	boiler.safety@labor.nc.gov	Physical Address- 111 Hillsborough St. Raleigh, NC 27603 Mailing Address- 1101 Mail Service Center, Raleigh, NC 27699-1101
Don Kinney Bureau Chief	919-707-7911	919-608-5315	910-724-5607	don.kinney@labor.nc.gov	
Greg Davis West Supervisor, Back-up East Supervisor	N/A	828-230-8347	828-400-6742	greg.davis@labor.nc.gov	
Jeremy Smith Assistant Bureau Chief RIS @ Southern Ind. Const. AIS/RIS @ Edwards & Morris, Back-up west Supervisor	919-707-7910	910-703-0911	910-622-0340	jeremy.smith@labor.nc.gov	
NB Certificate of Acceptance as AIA				Expires-06/11/2020	
ASME Certificate of Accreditation Certificate #AIA-007				Expires-06/11/2020	

Exhibit 10.17

Screen Shot

Excel BSB QA General Workbook

CAR Log

AutoSave Off BSB QA General Workbook - Excel Smith, Jeremy

File Home Insert Draw Page Layout Formulas Data Review View Add-ins Help OnBase Acrobat Search Share Comments

Clipboard Font Alignment Number Styles Cells Editing

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	A	B	C	D	E	F
	CAR Number	Date Opened	Problem/Suggestion	Date Action	Initiated By	Assigned
71	BSB-CAR-0088	3/12/2018	Since last AI/RI Audit at Morris dated 05/23/2017, there has been no documented review of welder qualifications.	3/31/2018	Don Kinney	Don Kinney
74	BSB-CAR-0089	4/19/2018	RI signed an R-1 (routine repair), where R-1 was incorrectly filled out, and CH had not obtained original MDR and verified materials.	5/31/2018	Don Kidd	Don Kidd
77	BSB-CAR-0090	11/5/2018	BSB-CAR-0089 not completed and closed as of this date. Discovered during annual internal audit.	11/30/2018	Don Kinney	Don Kinney
80	BSB-CAR-0091	3/7/2019	Contrary to QAM 3.2.2 (d), Assistant Chief did not document the review of the latest edition of NB-360 (Rev.7 dated 05/06/2018).	3/7/2019	Don Kinney	Don Kinney
83	BSB-CAR-0092	8/27/2019	During AI audit it was found the AI was not documenting examination of cut edges by CH.	8/27/2019	Greg Davis	Greg Davis
86	BSB-CAR-0093	10/25/2019	Contrary to QAM 3.2.2 (d), Assistant Bureau Chief did not revise the manual to reflect the changes for the 2019 RCI-1 edition.	10/25/2019	Jeremy Smith	Jeremy Smith
89	BSB-CAR-0094	10/25/2019	Contrary to QAM 9.3.3, no documentation of the auditors training and experience was attached to the checklist, nor could these documents be located. In addition, no person is named responsible for approving auditors.	10/25/2019	Jeremy Smith	Jeremy Smith
93	BSB-CAR-0095	1/28/2020	Contrary to QA Manual 3.2.2 (d) the memo from the Asst. Chief for review of applicable ASME Code editions and changes does not reference the ASME sections or the NBIC parts	1/28/2020	Jeremy Smith	Jeremy Smith

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1	Controlled Copy	Controlled QA Manual	Date of Issuance	Revision Level	Disposition/Comment
2	Number	Issued To			
3					
4	1	ASME Conformity Assessment Department	4/11/2014	9	Destroyed by ASME- 01/19/2017
5	2	Cliff Dautrich	4/11/2014	9	Destroyed by Dautrich- 01/19/2017
6	1	ASME Conformity Assessment Department	1/19/2017	10	Destroyed by Kinney- 04/10/2017
7	2	DOL IT and Intranet	1/31/2017	10	Replaced with Rev.11
8	3	Chief Dautrich	1/31/2017	10	Destroyed by Kinney- 04/10/2017
9	4	Asst. Chief Kinney (original hard copy)	1/31/2017	10	Placed in historical file
10	1	ASME Survey Team Leader-Pat Nightengale	4/6/2017	11	Issued at Survey- Destroyed by ASME, replaced with electronic copy; Repl
11	2	Chief Kinney	4/6/2017	11	Destroyed by J Smith 10/28/2019
12	3	Asst. Chief Smith (original hard copy)	4/6/2017	11	Paper copy, intranet and QA file copy; Destroyed by J Smith 10/28/2019
13	5	Hussein Sadek (for independent audit)	2/12/2019	11	Destroyed by Sadek 2/27/2019
14	6	Don Kinney (for independent audit)	2/12/2019	11	Destroyed by Kinney 02/13/2019
15	7	Greg Davis (for independent audit)	2/12/2019	11	Destroyed by Kinney 02/13/2019
16	8	ASME- Electronic Copy (to replace paper copy)	4/30/2018	11	Emailed to ASME per request- only electronic copies now; Replaced with R
17	9	Jeremy Smith (for independent audit)	2/12/2019	11	Destroyed by Kinney 02/13/2019
18	10	Paul Martin (for independent audit)	2/12/2019	11	Destroyed by Kinney 02/13/2019
19	11	Fred Harrison (for ASME interim Audit)	10/24/2019	11	Destroyed by J Smith 10/28/2019
20	Original	Jeremy Smith	10/25/2019	12	
21	1	Fred Harrison (electronic copy for ASME files)	10/25/2019	12	
22	2	National Board	10/28/2019	12	
23	3	Walter Beach (for independent audit)	12/6/2019	12	Destroyed by J Smith 01/28/2020
24					
25					

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	A	B	C	D	E	F	G
	Name	Date of Email	Acknowledgment	Revision	Revision	Verifier	
63	Jeremy Smith	4/17/2017	4/18/2017	11	4/6/2017	Don Kinney	
64	Oscar Coley	4/17/2017	4/19/2017	11	4/6/2017	Don Kinney	
65	Paul Martin	In-person	10/27/2017	11	4/6/2017	Don Kinney	
66	Allison Jay	4/17/2017	4/18/2017	11	4/6/2017	Don Kinney	
67							
68	Dean Johnson	10/31/2019	11/1/2019	12	10/25/2019	Jeremy Smith	
69	Danny Harrell	10/31/2019	11/15/2019	12	10/25/2019	Jeremy Smith	
70	Mark Hutchens	10/31/2019	11/15/2019	12	10/25/2019	Jeremy Smith	
71	John Kirkland	10/31/2019	11/12/2019	12	10/25/2019	Jeremy Smith	
72	Greg Sims	10/31/2019	11/18/2019	12	10/25/2019	Jeremy Smith	
73	Greg Davis	10/31/2019	10/31/2019	12	10/25/2019	Jeremy Smith	
74	Don Kinney	10/31/2019	10/31/2019	12	10/25/2019	Jeremy Smith	
75	Jimmy Snuffer	10/31/2019	11/13/2019	12	10/25/2019	Jeremy Smith	
76	Richard Parker	10/31/2019	11/15/2019	12	10/25/2019	Jeremy Smith	
77	Derek Bailey	10/31/2019	11/4/2019	12	10/25/2019	Jeremy Smith	
78	Sam Kirkman	10/31/2019	11/15/2019	12	10/25/2019	Jeremy Smith	
79	Andrew Gunto	10/31/2019	11/14/2019	12	10/25/2019	Jeremy Smith	
80	Jeremy Smith	10/31/2019	11/6/2019	12	10/25/2019	Don Kinney	
81	Oscar Coley	10/31/2019	11/12/2019	12	10/25/2019	Jeremy Smith	
82	Paul Martin	10/31/2019	11/12/2019	12	10/25/2019	Jeremy Smith	
83	Emily Fish	10/31/2019	11/12/2019	12	10/25/2019	Jeremy Smith	
84	Allison Jay	11/6/2019	11/14/2019	12	10/25/2019	Jeremy Smith	
85							
86							

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Excel BSB QA Supervisor Monitoring Workbook (Tabs by Shop)

Section	Description	Scheduled	Completed
1	Title Page	February	2/13/2020
2	Table of Contents	March	2/13/2020
3	Policy Statement of Responsibility and Authority	March	2/13/2020
4	Manual Registration	April	2/13/2020
5	Abbreviations and Definitions	April	2/13/2020
6	Organizational Chart	May	2/13/2020
7	Introduction	May	3/9/2020
8	Registry and Quality Control System Manual Control	June	3/9/2020
9	Drawings, Design Calculations and Specification Control	June	
10	Material Control	July	
11	Examination and Inspection Program	July	
12	Correction of Nonconformities	August	
13	Welding Control	August	
14	Nondestructive Examination	September	
15	Heat Treatment	September	
16	Calibration of Measuring and Test Equipment	October	
17	Records Retention	November	
18	Authorized Inspector	November	
19	Repairs and Alterations	December	
20	Exhibits	December	

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Excel BSB QA Supervisor Shop Activity Workbook

(Tabs by Shop)

	A	B	C	D
	Date of Visit	Supervisor	Commission #	Reason for Visit- Buckeye
1				
2				
3	3/11/2013	Davis	12214	Visited shop with AI Snuffer to sign off on hold point during ride-along.
4	10/30/2013	Davis	12214	AI Audit on Jimmy Snuffer.
5	10/21/2014	Davis	12214	AI Audit on Jimmy Snuffer.
6	9/22/2015	Davis	12214	AI Audit on Jimmy Snuffer, Cliff Dautrich performin AIS Audit.
7	10/26-27/2015	Davis	12214	ASME renewal with Michael Lev and Jimmy Snuffer.
8	7/22/2016	Davis	12214	Performed 1/2 day shop AI responsibilities
9	7/26/2016	Davis	12214	Performed 1/2 day shop AI responsibilities
10	7/29/2016	Davis	12214	Performed 1/2 day shop AI responsibilities
11	10/25/2016	Davis	12214	Visited shop with Snuffer, ride-along.
12	11/15/2016	Davis	12214	AI Audit on Jimmy Snuffer. Cliff Dautrich conducted AIS Audit on Greg Davis.
13	7/10/2017	Davis	12214	Visited shop and reviewed Inspector Diary
14	11/14/2017	Davis	12214	Conducted AI Audit with Jimmy Snuffer and Jim Sylvester
15	4/6/2018	Davis	12214	Visited shop with Mark Hutchens to review the Inspector Diary and observe Mark conducting shop inspections.
16	7/17/2018	Davis	12214	AI Audit for Mark Hutchens
17	12/4/2018	Davis	12214	Pre-Joint review with J Sylvester, Jimmy Snuffer, Lee Luizier and Greg Davis
18	1/7,8/2019	Davis	12214	ASME renewal with Dan Cheetham as Team Leader, Lee Luizier, Jim Sylvester, Jimmy Snuffer, Richard Parker as Observber and Greg Davi
19	1/23/2019	Davis	12214	Conducted 30 day AIA follow up for deficiencies found during ASME certificate renewal with Jimmy Snuffer, Jim Sylvester, Dee Luizier
20	2/19/2019	Davis	12214	Greg Davis visited shop and observed Jimmy performing a fit up inspection, hydrostatic test and an internal.
21	8/27/2019	Davis	12214	AI Audit for Mark Hutchens with Richard Parker conducting the audit for his B endorsement with Lee Luizier and Jim Sylvester present.
22				
23				
24				

ASME Competency & Training Record

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	A	B	C	D	E	F
	Date	Supervisor/Instructor	Classroom/Online/Self-Study	Attendees	Topics Discussed	
114				Andrew Gunto, Don Kidd, Richard Parker, Paul Martin		
115				Jeremy Smith, Sam Kirkman, Derek Bailey, Junior Coley,		
116				John Kirkland, Greg Sims.		
117						
118	10/31/2018	Don Kinney	Self-study	Cliff Dautrich, Don Kidd, Jeremy Smith, Dean Johnson,	Changes in 2017 edition of ASME Section III,	
119				Danny Harrell	Appendix XXIII and Supplements	
120						
121	6/30/2019	Kinney/Davis	Online Safety Training	Bailey, Coley, Davis, Gunto, Harrell, Hutchens, Johnson,	Slips, Trips & Falls, Asbestos, Back Injury, Fall Protection,	
122				Kinney, Kirkland, Kirkman, Martin, Parker, Sims, Smith, Snuffer	Ergonomics, Fire Prevention/Response, Hazard Awareness	
123						
124	7/11/2019	Kinney/Davis/Smith	Online & Classroom	Coley, Bailey, Martin, Harrell, Kirkland, Gunto, Johnson, Sims,	ASME UW-9(d). All safety training completed.	
125				Parker, Hutchens, Snuffer, Kirkman		
126						
127	10/28-29/2019	Michael Lev	Classroom	Jeremy Smith, Paul Martin, Derek Bailey, Danny Harrell,	2019 ASME & NB Code changes	
128				John Kirkland, Andrew Gunto, Emily Fish,		
129				Greg Davis, Jimmy Snuffer, Junior Coley, Don Kinney,		
130				Mark Hutchens, Richard Parker, Sam Kirkman, Dean Johnson		
131				Greg Sims		
132						
133	1/28/2020	Greg Davis	Self-Study/Email	Andrew Gunto, Dean Johnson, Derek Bailey, Danny Harrell,	2019 ASME Section VIII Div. 1. Requirements for SA0105	
134				Emily Fish, Greg Sims, Don Kinney, Jeremy Smith, John Kirkland	Flanges. UCS-66(c)	
135				Junior Coley, Jimmy Snuffer, Mark Hutchens, Paul Martin,		
136				Richard Parker, Sam Kirkman		
137						
138	1/30/2020	Jeremy Smith	Self-Study/Email	Andrew Gunto, Dean Johnson, Derek Bailey, Danny Harrell,	2019 ASME Section IX requirements for supervisor of welding	
139				Emily Fish, Greg Sims, Greg Davis, Don Kinney, John Kirkland	activities. QG-106	
140				Junior Coley, Jimmy Snuffer, Mark Hutchens, Paul Martin,		
141				Richard Parker, Sam Kirkman		
142						

Competency-Safety Training Rec. 2013-2014 NB Online Training 2015 NB Online Training 2017 NB Online Training 2018 NB Online Training

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Excel BSB QA Training Workbook

National Board Online Training Record

(By Year)

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Inspector	Commissions & Endorsements	Operation & Installation of PRD's (IS)	Inspection Techniques for Firetube Boilers (IS)	Boiler Feedwater Basics (IS)	Inservice Inspection of Potable Water Heaters (IS)	Installation Inspection of Modular Boilers (IS)	Inspection of Pressure Reducing Stations (IS)		Heat Treatment (R)	ID of Existing Materials (R)	Methodology of a Repair (R)		Fabrication: General & Welded (AI/B)	Efficiency Determination (AI/B)	Inspection Test (AI/B)
1																
2																
3	Kinney	IS,AI,B,N,NS,R				4/17/2019						4/18/2019				
4	Johnson	IS,AI,B,N,R		6/4/2019								4/12/2019				
5	Smith	IS,AI,B,N,R			8/19/2019							8/19/2019				
6	Harrell	IS,AI,B,N,R				4/24/2019						4/26/2019				
7	Davis	IS,AI,B,R					5/14/2019					8/1/2019				
8	Hutchens	IS,AI,B,R					9/23/2019					9/24/2019				
9	Snuffer	IS,AI,B,R				10/2/2019						10/2/2019				
10	Gunto	IS,AI,R				9/27/2019						10/22/2019				
11	Kirkman	IS,AI,R			9/16/2019					9/17/2019				9/16/2019		
12	Parker	IS,AI,B,R					4/11/2019					9/18/2019				
13	Martin	IS,AI,R				5/24/2019						8/7/2019				8/5/2019
14	Coley	IS,R						4/5/2019				4/5/2019				
15	Kirkland	IS,R				8/28/2019				8/28/2019						
16	Sims	IS,R					10/2/2019					10/2/2019				
17	Bailey	IS,R					8/19/2019					9/6/2019				
18	Kidd	IS,AI,B,N,R	Retired 01/31/19													
19																
20	Dautrich	IS,AI,B,N,NS,R	Retired 06/30/19	5/1/2019								5/1/2019				
21																
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