Standards and Certification Training

Module B – Process

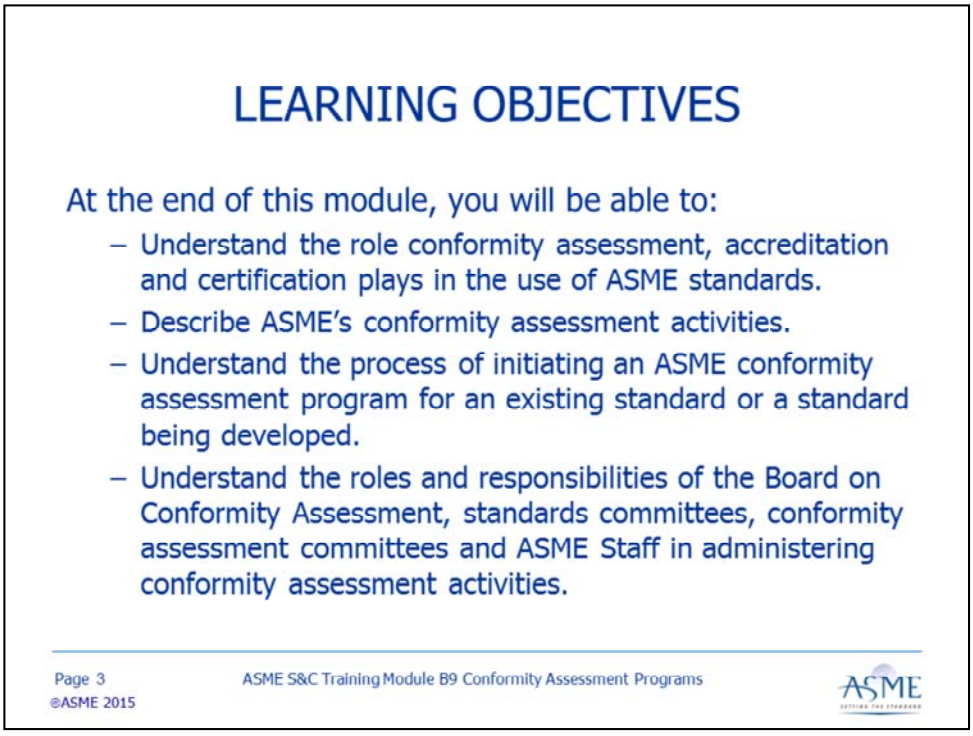
B9 ASME Conformity Assessment Programs

MODULE B - PROCESS

B1. ASME Organizational Structure
B2. Standards Development: Staff and Volunteer Roles and Responsibilities
B3. Conformity Assessment: Staff and Volunteer Roles and Responsibilities
B4. Initiating and Terminating Standards Projects
B5. Consensus Process for Standards Development
B6. The Basics of Parliamentary Procedure
B7. The Appeals Process
B8. International Standards Development
B9. ASME Conformity Assessment Programs
B10. Performance Based Standards
B.11. Consensus Process for Standards Interpretations and Code Cases

REVISIONS

DATE	CHANGE
10/16/15	Total Re-Write of Module to better explain the ASME Conformity Assessment Programs
11/3/11	Slide 0 Minor changes to module titles 19, 21, 22 and 24 Deleted to remove ISO 9000 references, dual reporting and to consolidate slides. Slides 4, 7, 12, 14, 15, 17, 18,19, 20, 21 and 22 Revised to remove ISO 9000 and QHO references, updated references to policies, added new committees and noted that some product certification committees report to BCA.
11/22/10	Changed "Codes and Standards Board of Directors" to "Council on Standards and Certification" throughout.



At the end of this module, you will be able to:

- Understand the role conformity assessment, accreditation and certification plays in the use of ASME standards.
- Describe ASME's conformity assessment activities.
- Understand the process of initiating an ASME conformity assessment program for an existing standard or a standard being developed.
- Understand the roles and responsibilities of the Board on Conformity Assessment, standards committees, conformity assessment committees and ASME Staff in administering conformity assessment activities.

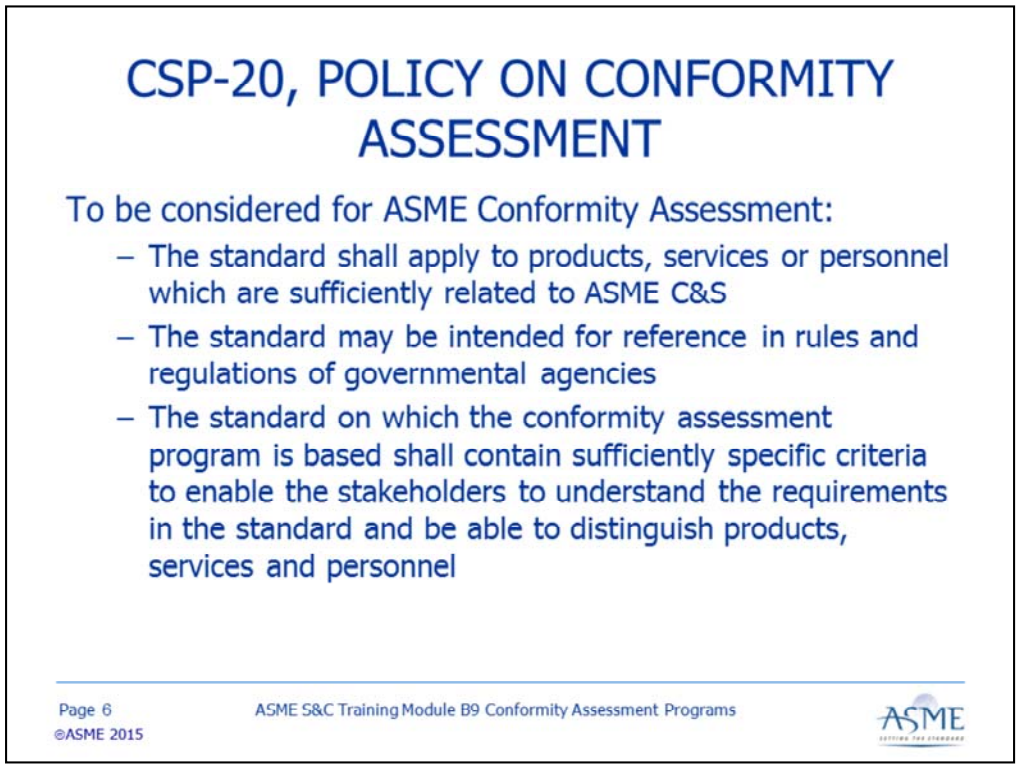
AGENDA

I. ASME Conformity Assessment Overview
II. Types of ASME Conformity Assessment Programs
III. Current ASME Conformity Assessment Programs
IV. Establishing New ASME Conformity Assessment Programs
V. ASME Conformity Assessment Roles and Responsibilities
VI. Module Summary
VII. References

These topics will be covered in this module.

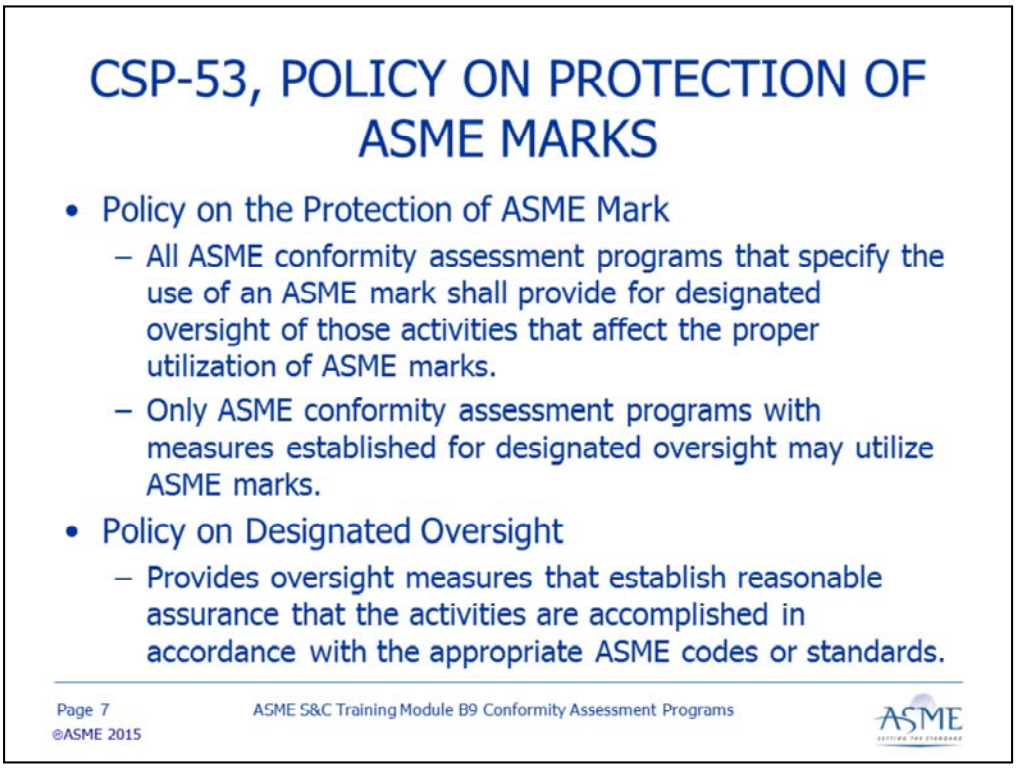
I. ASME CONFORMITY ASSESSMENT OVERVIEW

First we will look at an overview of ASME conformity assessment.



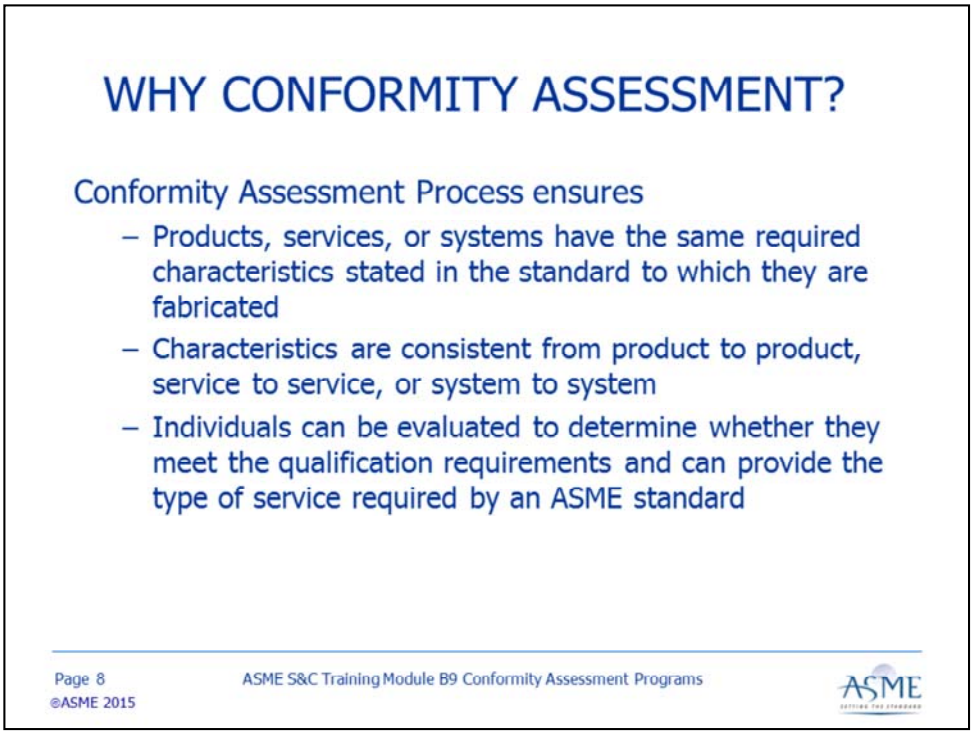
ASME Codes and Standards Policy, CSP-20, provides the basis for the ASME conformity assessment programs as noted below:

- The standard shall apply to products, services or personnel which are sufficiently related to ASME C&S
- The standard may be intended for reference in rules and regulations of governmental agencies
- The standard on which the conformity assessment program is based shall contain sufficiently specific criteria to enable the stakeholders to understand the requirements in the standard and be able to distinguish products, services and personnel



CSP-53 outlines the:

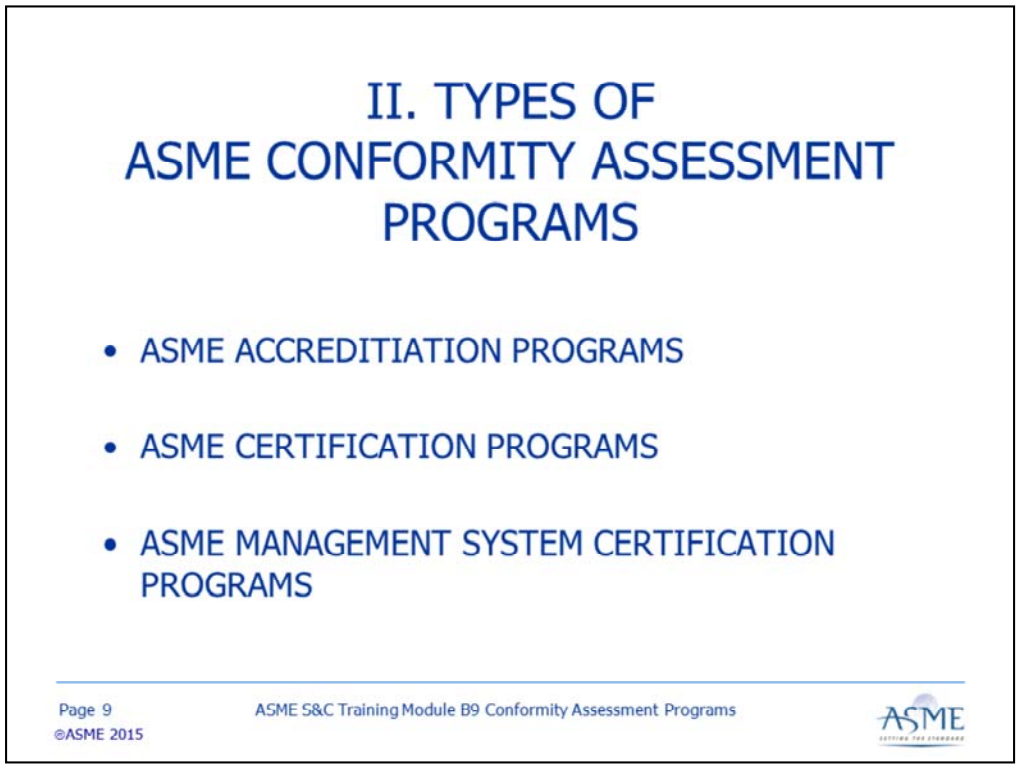
- Policy on the Protection of ASME Mark - All ASME conformity assessment programs that specify the use of an ASME mark shall provide for designated oversight of those activities that affect the proper utilization of ASME marks. Only ASME conformity assessment programs with measures established for designated oversight may utilize ASME marks.
- Policy on Designated Oversight which provides the measures established for designated oversight shall comply with ASME-developed criteria. The criteria shall provide oversight measures that establish reasonable assurance that the activities (of the entity authorized by ASME to use its marks) that affect the use of ASME marks are accomplished in accordance with the appropriate ASME codes or standards.



A conformity assessment process provides a means to ensure that:

- Products, services, or systems have the same required characteristics stated in the standard to which they are fabricated
- These characteristics are consistent from product to product, service to service, or system to system
- Individuals can be evaluated to determine whether they meet the qualification requirements of an ASME standard

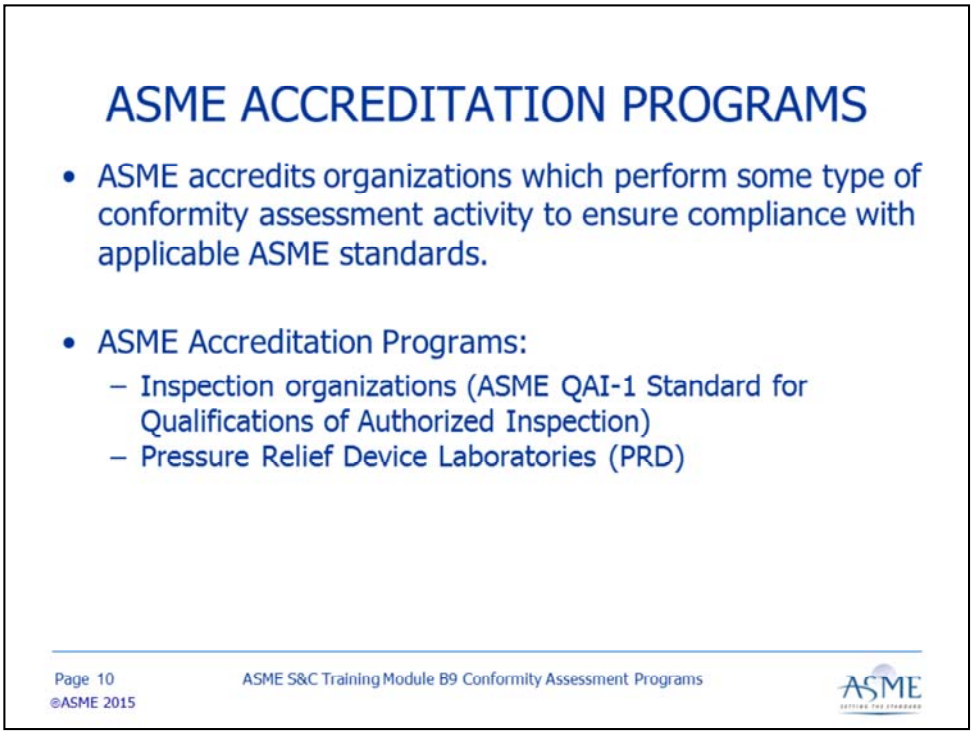
The ability to ensure that products and personnel meet requirements of standards is essential where public health and safety are impacted, as is the case with many of ASME's standards.



There are three types of conformity assessment programs.

- ASME accreditation programs
- ASME certification programs
- ASME Management systems certification programs

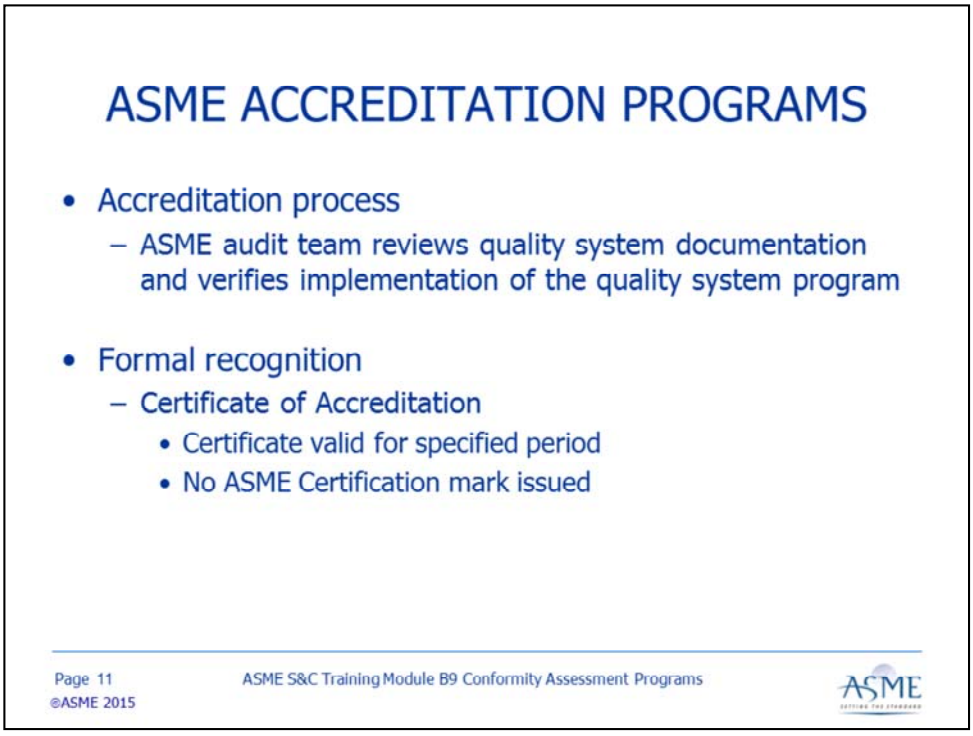
These different types of conformity assessment programs will be covered in the following slides.



ASME accredits organizations which perform some type of conformity assessment activity to ensure compliance with applicable ASME standards.

ASME Accreditation Programs include:

- Inspection organizations (ASME QAI-1 Standard for Qualifications of Authorized Inspection)
- Pressure Relief Device Laboratories (PRD)



The accreditation process requires that an ASME audit team reviews quality systems documentation and verifies implementation.

- ASME Accreditation process uses on-site reviews by an audit team to determine whether or not an applicant should be accredited.

- If accreditation is approved, ASME will issue the supplier a Certificate of Accreditation valid for a specified period, ranging from 3 to 5 years. No certification Mark is issued.

There are two types of ASME certification;

- ASME Product Certification is intended to indicate that the company receiving ASME certification has demonstrated to ASME via a review or survey that they have the capability to fabricate and/or assemble a product to a standard.

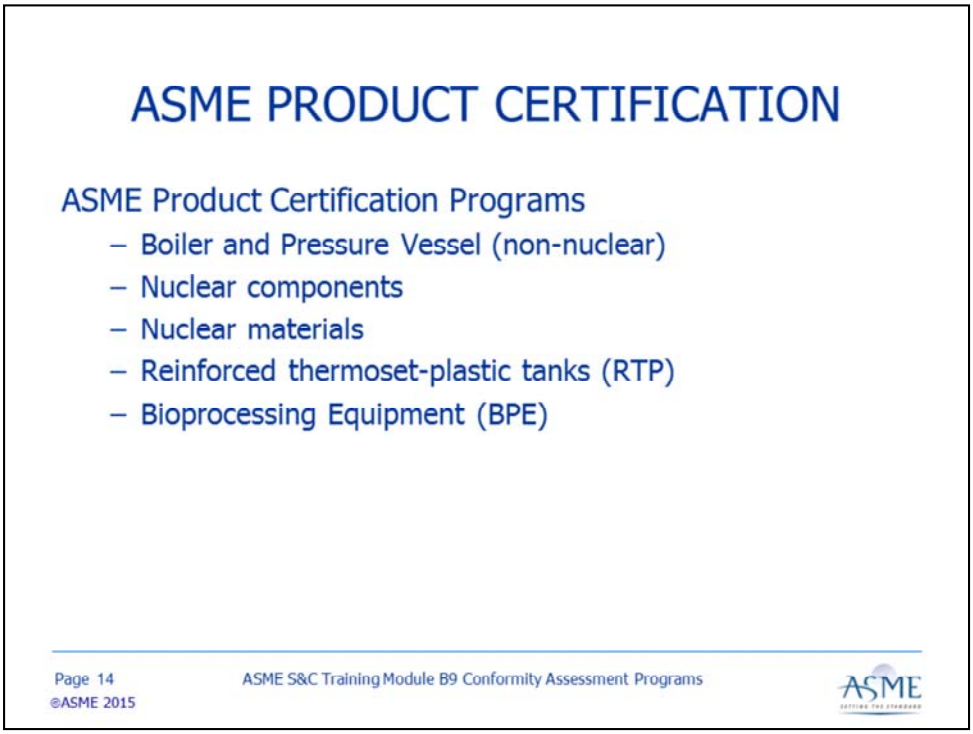
- ASME Personnel Certification means that an individual's qualifications have been reviewed, proficiency has been demonstrated, and the individual has been accepted by ASME as meeting all requirements of an ASME Standard

Certification process

- ASME designee conducts a review or survey at the applicants shop or facility to assess the applicant's
  - Quality control system (manual)
  - Fabrication and/or assembly process to demonstrate the ability to meet the requirements of the applicable ASME standard.
- For use of ASME Certification mark, the manufacturer (applicant that has received Certification) is responsible for ensuring that products built to an ASME standard meet the requirements on which the certification is based.

Formal recognition is given through Certificates of Authorization or Quality Systems Certificates

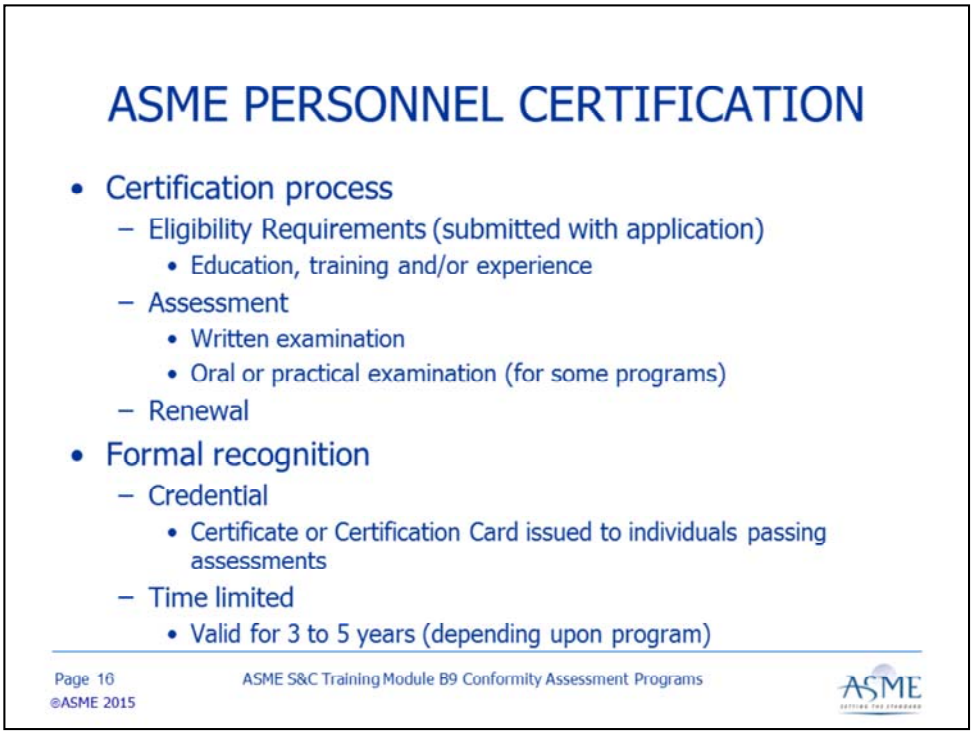
- Certificates of Authorization are used in the boiler and pressure vessel (non-nuclear), nuclear components, and reinforced thermoset-plastic tanks (RTP) programs because ASME marks are applied to certified equipment.
- While many of the nuclear programs have ASME marks, for the supply and/or manufacture of nuclear materials, a Quality System Certificate is issued.



ASME currently has the following product certification programs

- Boiler and Pressure Vessel (non-nuclear)
- Nuclear components
- Nuclear materials
- Reinforced thermoset-plastic tanks (RTP)
- Bioprocessing Equipment (BPE)(Newly established)

- Benefits of certification:
  - In some cases, certification serves as a means of conforming with government regulation, such as those established by the U.S. Environmental Protection Agency (EPA).
  - In all cases, it shows that an individual has demonstrated his or her competence to perform a certain activity, which may be beneficial to both the individual and employer.
- Certification criteria is developed with the help of industry stakeholders or meets government regulations.



- The ASME personnel certification process involves and evaluation on whether or not an applicant meets education or experience eligibility requirements.
  - ASME will then assess the applicant using standardized and secure written examinations to test the applicant's knowledge. In most cases personnel certification involves taking a written exam only at an ASME approved testing facility.
  - Oral or practical examinations are required for some of the programs.
- If ASME approves certification, it will give the applicant a certificate or certification card valid for a period of 3 to 5 years after that time, the credentials can be renewed.

Note: ASME Certification is not intended as an assertion or implication that ASME accepts any responsibility for the compliance, or liability for the consequences of noncompliance, of any individual's performance under the issued certification. Such responsibility and liability remain with the individual or employer.

Currently ASME offers the following Personnel Certification Programs

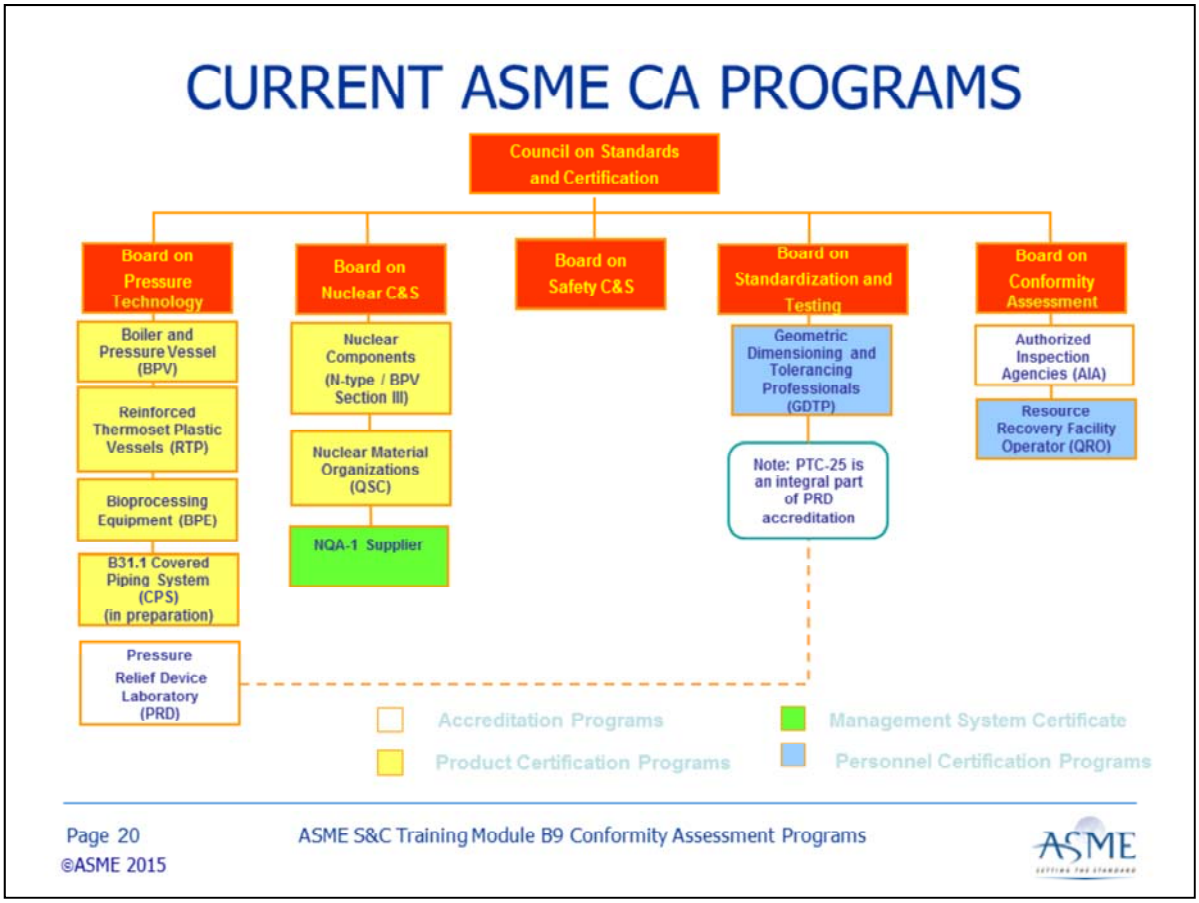
- Resource recovery facility operators (QRO) which offers Provisional and Operator Certification as referenced in the Code of Federal Regulation by the US EPA. This program currently has certified operators in 63 out of 84 plants in the US
- Geometric dimensioning & tolerancing professionals (GDTP) uses Y14.5 as the Body of Knowledge. This program offers 2 Certifications (Technologist & Senior). It is the only program offered internationally and has an average growth rate of 10% per year.
- ASME NDE/QC personnel (ANDE) program offers third party certification alternative to owner-based NDE personnel certification in ASME codes. The initial focus of this program is on immediate needs of Nuclear industry and it is addressing high level priorities first – Ultrasonic Testing. Programs for other NDE and QC methods will follow.

- ASME management system certification means the management system of the organization has been reviewed by ASME and conforms to specified requirements contained in an ASME standard.
- The organization has demonstrated its capability to consistently achieve its stated policy and objectives.
- This certification does not include certification of products, services or personnel.
- No ASME certification mark is issued.
- NQA-1 Nuclear Quality Assurance certification program is an example of a management system program.

III. CURRENT ASME CONFORMITY ASSESSMENT PROGRAMS AS OF SEPTEMBER 1, 2015

- BPV CERTIFICATION – 6,800 CERTIFICATE HOLDERS – 11,930 CERTIFICATES
- BPV NUCLEAR - 250 CERTIFICATE HOLDERS –720 CERTIFICATES
- BPV NUCLEAR MATERIALS – 90 CERTIFICATE HOLDERS – 102 CERTIFICATES
- PRD (VALVE TESTING LABS (BOILER CODE) - 10 CERTIFICATE HOLDERS – 56 CERTIFICATES (INCLUDES AUTHORIZED OBSERVORS WHO PERFORM PRESSURE RELIEF DEVICE TESTING)
- AIA CERTIFICATION- 31 CERTIFICATE HOLDERS – 31 CERTIFICATES (INSPECTOR AND SUPERVISOR COMMISSION/CERTIFICATION PERFORMED BY THE NATIONAL BOARD)
- RTP – 12 CERTIFICATE HOLDERS – 12 CERTIFICATES
- BPE – 4 CERTIFICATE HOLDERS – 4 CERTIFICATES (NEW PROGRAM INITIATED 2013)
- NQA-1 – 1 CERTIFICATE HOLDERS – 1 CERTIFICATES (NEW PROGRAM INITIATED 2013)
- QRO – 1520 CERTIFICATES – CERTIFICATES ISSUED TO INDIVIDUALS
- GDTP (Y14.5) - 1495 Certificates – CERTIFICATES ISSUED TO INDIVIDUALS

This slide shows the number of organizations/certificate holders and number of certificates issued for each ASME accreditation/certification (company and individual) conformity assessment program.



This chart shows the supervisory board responsible for oversight of the criteria upon which the accreditation or certification program is based. These committees all have representation on the Board on Conformity Assessment.

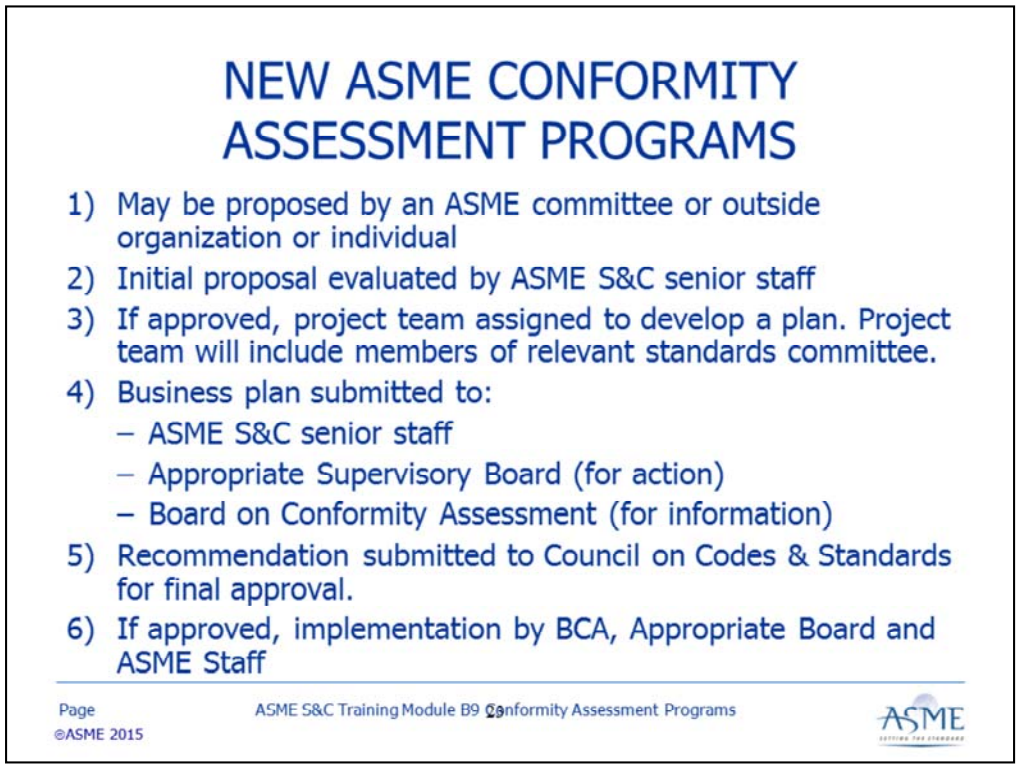
ASME COMMITTEES WITH CERTIFICATION/ACCREDITATION PROGRAMS

- COMMITTEE ON CONFORMITY ASSESSMENT REQUIREMENTS (CAR)
- COMMITTEE ON DESIGNEES (COD)
- COMMITTEE ON CONDUCT OF CONFORMITY ASSESSMENT ACTIVITIES (C3A2)
- COMMITTEE ON BPV CONFORMITY ASSESSMENT (CBPVCA) (BOILER CODE – SECTIONS I, IV, VIII,DIV.1,2 &3, X, XII)
- COMMITTEE ON NUCLEAR CERTIFICATION (CNC) (BOILER CODE SECTION III) (NQA –QUALITY PROGRAM CERTIFICATION)
- STANDARDS COMMITTEEE ON QUALIFICATIONS FOR AUTHORIZED INSPECTION (QAI)
- COMMITTEE ON RTP CERTIFICATION
- COMMITTEE ON BPE CERTIFICATION
- COMMITTEE ON QUALIFICATION OF RESOURCE RECOVERY FACILITY OPERATORS (QRO)
- COMMITTEE ON CERTIFICATION OF NON-DESTRUCTIVE EXAMINATION PERSONNEL AND QUALITY CONTROL TECHNICANS (CERTIFICATION OF NDE AND QC PERSONNEL WITHIN THE
- BOILER AND NUCLEAR INDUSTRY)(ANDE)
- COMMITTEE ON NUCLEAR QUALITY ASSURANCE ACCREDITATION PROGRAM
- B31.1, CODE FOR PRESSURE PIPING
- PROPOSED-CERTIFICATION PROGRAM COVERS PIPING SYSTEMS OUTSIDE THE JURISDICTION OF "PP" SYSTEMS COVERED BY SECTION I OF THE BOILER CODE)

This is a list of all ASME committees with certification/accreditation programs administered by the Board on Conformity Assessment.

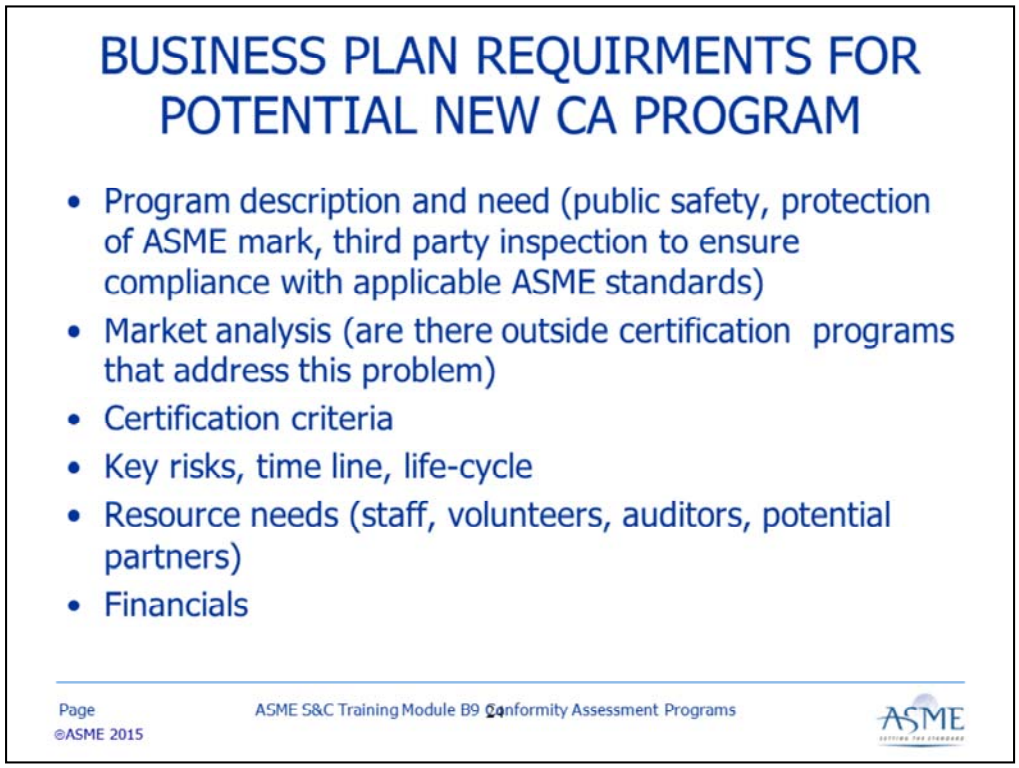
IV. ESTABLISHING NEW ASME CONFORMITY ASSESSMENT PROGRAMS

Now let's look at the establishment of new ASME conformity assessment programs.



The steps for the development of a new conformity assessment program are as follows:

1. New conformity assessment programs may be proposed by an ASME committee or outside group.
2. Initial proposals are evaluated by ASME S&C senior staff
3. If accepted, a project team is assigned to develop a business plan. The project team will include members of relevant standards committee.
4. The business plan is then submitted to ASME S&C senior staff, the appropriate Board for action and the Board on Conformity Assessment for information.
5. The recommendation is then submitted to the Council on Codes & Standards for action.
6. If approved, the new conformity assessment program is then implemented by the BCA, Appropriate Board and ASME Staff.



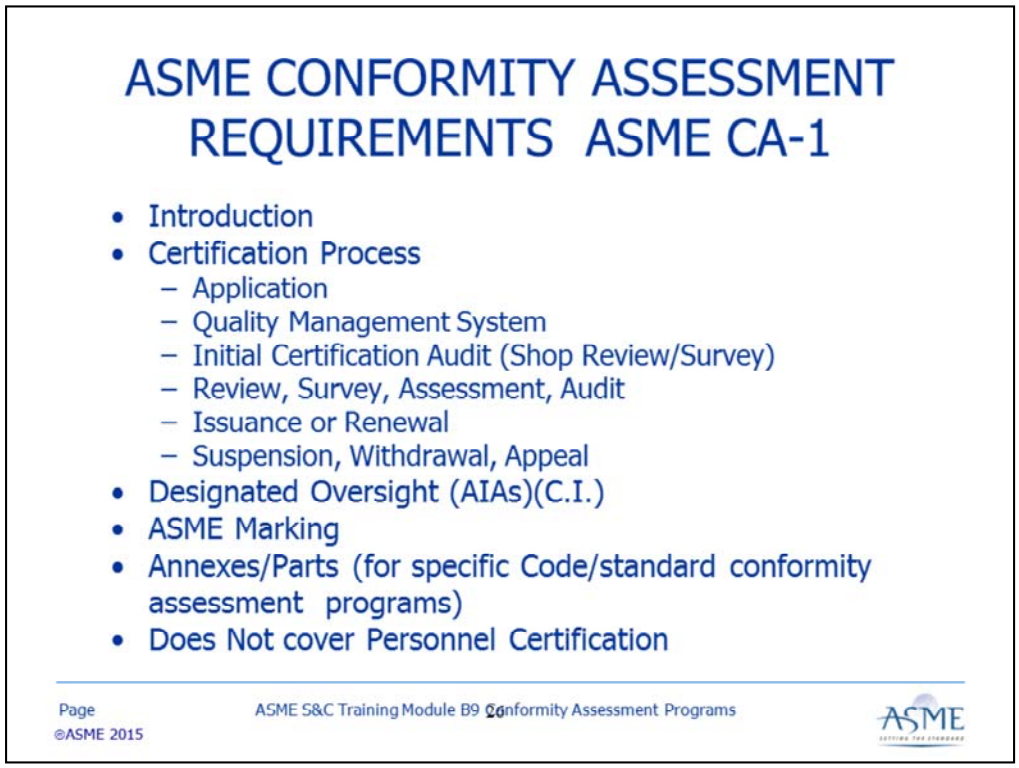
If a request is submitted to ASME for a potential new ASME conformity assessment program, it must contain the following elements and adhere to the published "Guideline for Evaluation of Potential New ASME Conformity Assessment and Credentialing Programs" which can be found on the ASME C&S Connect web site.

- These include:
- Program description and need (public safety, ensure compliance with applicable ASME standard, etc.)
- Market Analysis (are there organizations or industry groups that address this problem)
- Certification criteria
- Key risks, time line, life-cycle
- Resource needs (staff, volunteers, auditors, potential partners)
- Financials

If the proposal is approved by ASME senior staff and the Council on Standards and Certification, there are three options for how the program will operate:

- The program could be administered by an existing conformity assessment committee.
- The standards committee associated with the proposed conformity assessment program could form their own certification committee reporting directly to the standards committee.
  - For personnel certification, the requirements for testing are developed by the cognizant committee. The testing itself and issuance of certificates is administered by ASME Staff.

The testing of individuals for the personnel certification program is done through written, oral and practical demonstration depending on the type of personnel certification applied for by the individual. While the cognizant committee responsible for the personal certification program develops the test questions based on the requirements in the applicable standard and the requirements for the practical/physical demonstration required to achieve personnel certification, ASME staff decides where the testing will occur and whether to issue certification to the individual based on the test results. Individuals can appeal the test results to the appropriate committee if they feel the answers to the test questions are wrong or ambiguous.



All new CA programs are required to reference CA-1.

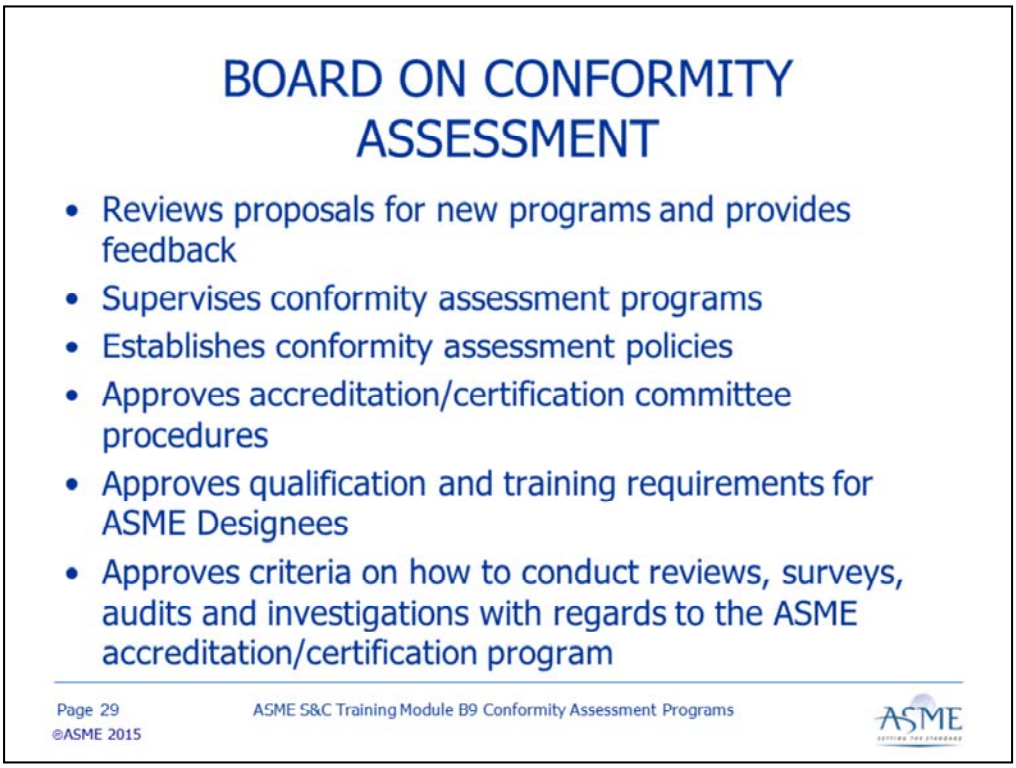
- ASME CA-1 specifies the requirements for certification of organizations supplying products and/or services that are intended to conform to the conformity assessment requirements of ASME standards that have conformity assessment programs.
- It covers all the administrative requirements for all ASME conformity assessment programs by removing the conformity assessment requirements currently found in all Boiler Code Book sections and ASME standards that have conformity assessment programs.
- It is intended to be used by all conformity assessment programs, except for personnel certification programs.

V. ASME CONFORMITY ASSESSMENT ROLES & RESPONSIBILITIES

The next three slides will briefly address the responsibilities of the Council on Standards and Certification, Board, standards committee, conformity assessment committee and ASME Staff. For more information on the organization of the Board on Conformity Assessment, review Module B3.

The Council on Standards and Certification is responsible for:

- Establishment of overall policies governing the operations of accreditation and certification programs
- Approval of initiating and sun-setting of programs
- Approval of the membership of the Board on Conformity Assessment (By Board on Codes and Standards Operations)
- Annual evaluation of Standards and Certification programs and activities, to determine continuation or sun-setting
- The final level of due process within the Society for appeals related to accreditation and certification, accomplished through its Board on Hearings and Appeals.



The Board on Conformity Assessment

- Reviews proposals for new programs and provides feedback
- Supervises conformity assessment programs
- Establishes conformity assessment policies
- Approves accreditation/certification committee procedures
- Approves qualification and training requirements for ASME Designees
- Approves criteria on how to conduct reviews, surveys, audits and investigations with regards to the ASME accreditation/certification program

Standards committees are responsible for:

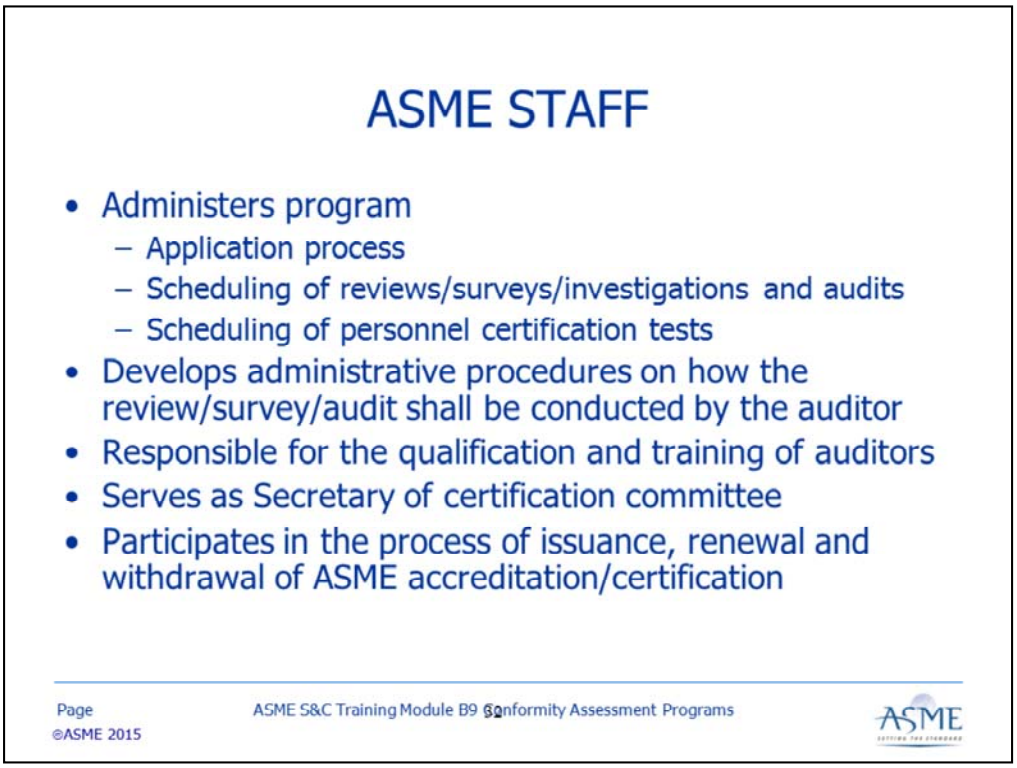
- Approval of standards that contain the requirements upon which accreditation or certification programs are based.
- Approval of personnel of Accreditation or Certification committees and recommends membership to the BCA
- Hearing appeals from applicants if the certification/accreditation issuing committee denies Applicant's appeal of Designees findings or recommendation resulting from a review or survey

For Boiler and Pressure Vessel Code certification activities (both boiler and nuclear), the certification committees are stand alone committees which report directly to BCA (Committee on BPV Conformity Assessment and Committee on Nuclear Certification).

As mentioned earlier, most accreditation and certification committees utilize existing ASME codes and standards developed by standards committees operating under other Boards.

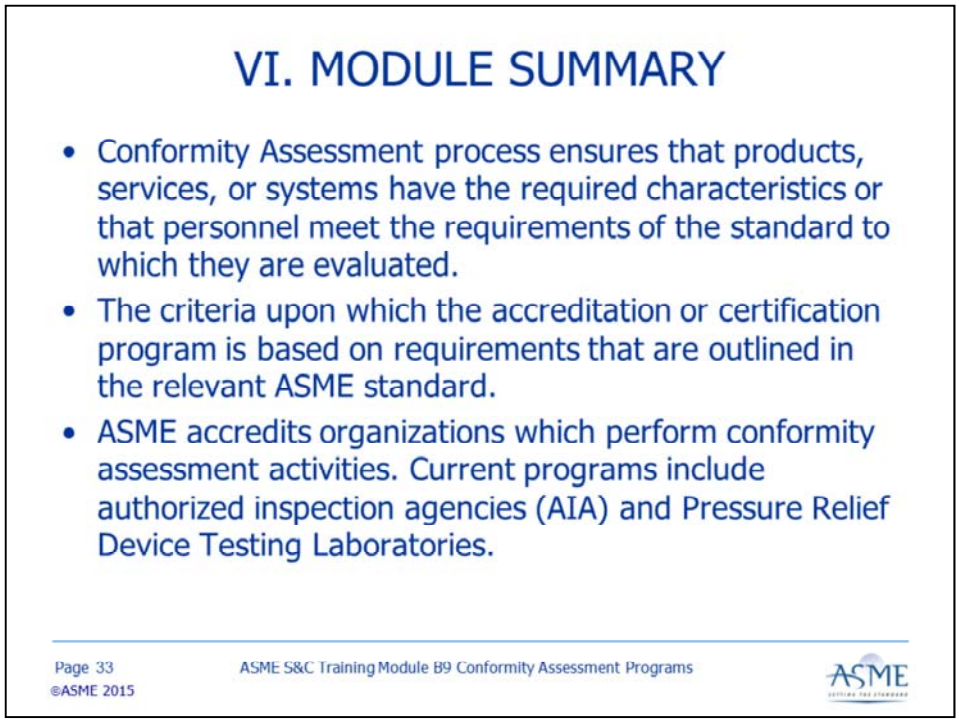
They are responsible for:

- Approve the issuance, renewal, extension, revision, and withdrawal of ASME certification/accreditation based on reports submitted by ASME designees.
- Review and evaluate all apparent deficiencies, non-conformities, or alleged violations and the corrective actions taken.
- Recommend changes for the improvement of the conformity assessment programs.
- Prepare accreditation and certification committee procedures for BCA approval.
- Hear initial appeal from Applicants and Certificate Holders of actions taken by either staff or the committee with regards to certification/accreditation issues.

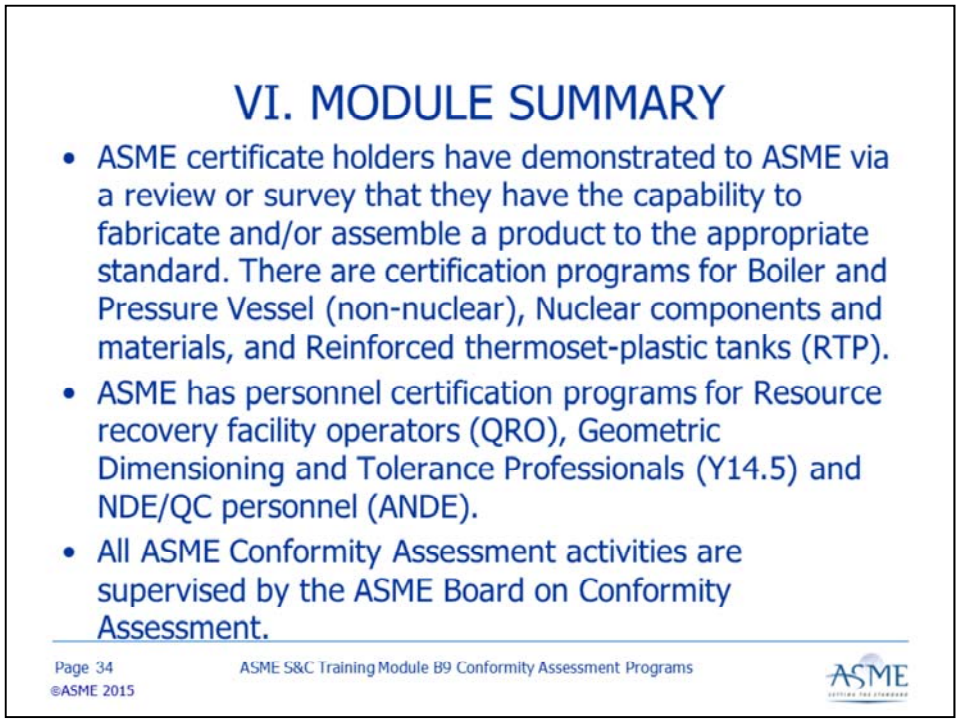


ASME Staff

- Administers the conformity assessment program including the application process and scheduling of reviews/surveys/investigations and audits or personnel certification tests.
- Develops administrative procedures on how the review/survey/audit shall be conducted by the auditor
- Is responsible for the qualification and training of auditors
- Serves as Secretary of certification committee
- Participates in the process of approval of issuance, renewal, and withdrawal of ASME accreditation/certification.



- Conformity Assessment Process ensures that products, services, or systems have the required characteristics or that personnel meet the qualification requirements of the standard to which they are evaluated.
- The criteria upon which the accreditation or certification program is based on requirements that are outlined in the relevant ASME standard.
- ASME accredits organizations which perform conformity assessment activities. Current programs include authorized inspection agencies (AIA) and Pressure Relief Device Testing Laboratories.



- ASME certificate holders have demonstrated to ASME via a review or survey that they have the capability to fabricate and/or assemble a product to the appropriate standard. There are certification programs for Boiler and Pressure Vessel (non-nuclear), Nuclear components and materials, and Reinforced thermoset-plastic tanks (RTP).
- ASME has personnel certification programs for Resource recovery facility operators (QRO), Geometric Dimensioning and Tolerance Professionals (Y14.5) and NDE/QC personnel (ANDE).
- All ASME Conformity Assessment activities are supervised by the ASME Board on Conformity Assessment.

VII. REFERENCES

The following Codes and Standards policies are available on C&S Web site at https://cstools.asme.org/csconnect/CommitteePages.cfm?Committee=L01000000&Action=7609

- CSP-5, Code Symbol Stamps and ASME Markings
- CSP-19, ASME Designee and ASME Designated Organization
- CSP-20, Policy on Accreditation and Certification
- CSP-53, Policy on Protection of ASME Marks
- CSP-55, Joint Conformity Assessment Activities
- CSP-58, Alternative Requirements Impacting Conformity Assessment
- CSP-63, Guide for Establishing New ASME Conformity Assessment Programs

VII. REFERENCES

Guidelines for Evaluation of Potential New ASME Conformity Assessment and Credentialing Programs
https://cstools.asme.org/csconnect/FileUpload.cfm?View=yes&ID=35810

How to Start a Certification Application online at:
https://www.asme.org/shop/certification-and-accreditation/to-start-a-certificate-application

Conformity Assessment Web site on asme.org contains information on all ASME certification/accreditation/personnel certification programs and can be accessed at
http://www.asme.org/kb/standards/certification---accreditation