New Plant Perspective: ASME Code Section III to Section XI Transition

NRC/Industry Meeting

August 20, 2009

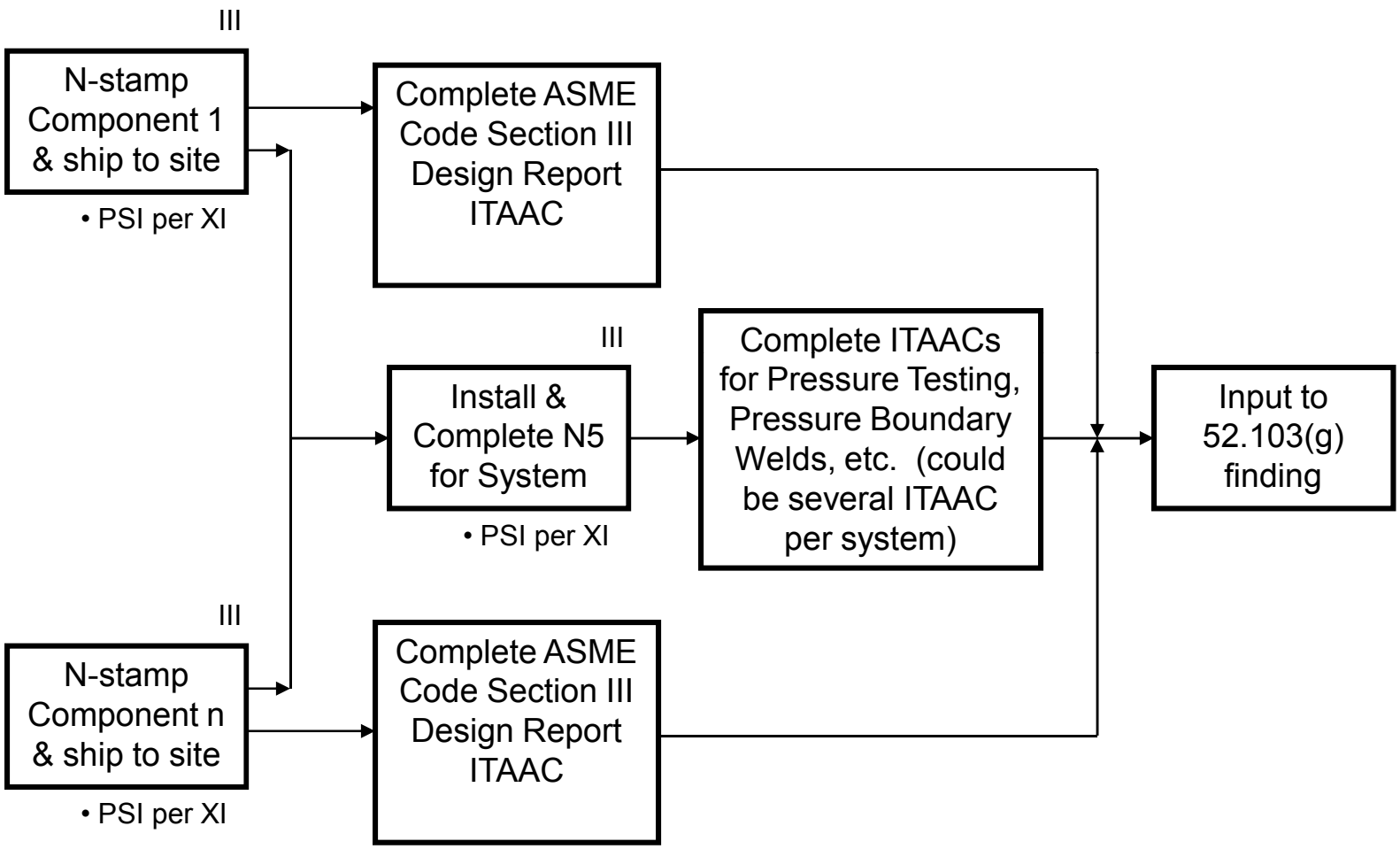
Purpose of this Meeting

- Industry perspective on ASME Section III to XI
- Background on transitioning from ASME Section III to XI
- Problems created if COL holder cannot transition from Section III to XI until 10 CFR 52.103(g) finding
- Industry position

Industry Perspective on 50.55a

- **Section 50.55a states that each combined license is "subject to the following conditions" except that they are "subject to the conditions in paragraphs (f) and (g) of the sections, but only after the Commission makes the finding under SS 52.103(g)."**
  - 50.55a does not preclude use of Section XI IAW ASME requirements prior to the Section 52.103(g) finding.
    - 50.55a (b) incorporates by reference both Sections III and XI of the ASME B&PV Code
    - 50.55a (f) & (g) **do not** address repair and replacement
    - Section 50.55a also states in the first paragraph that design certifications (which are part of most COL applications) are subject to the conditions in 50.55a (f)(3) and (g)(3). 50.55a (g)(3) states that ASME Code Class 1, 2 and 3 components (and supports) "must meet the preservice examination requirements set forth in . . . Section XI of the ASME B&PV Code."

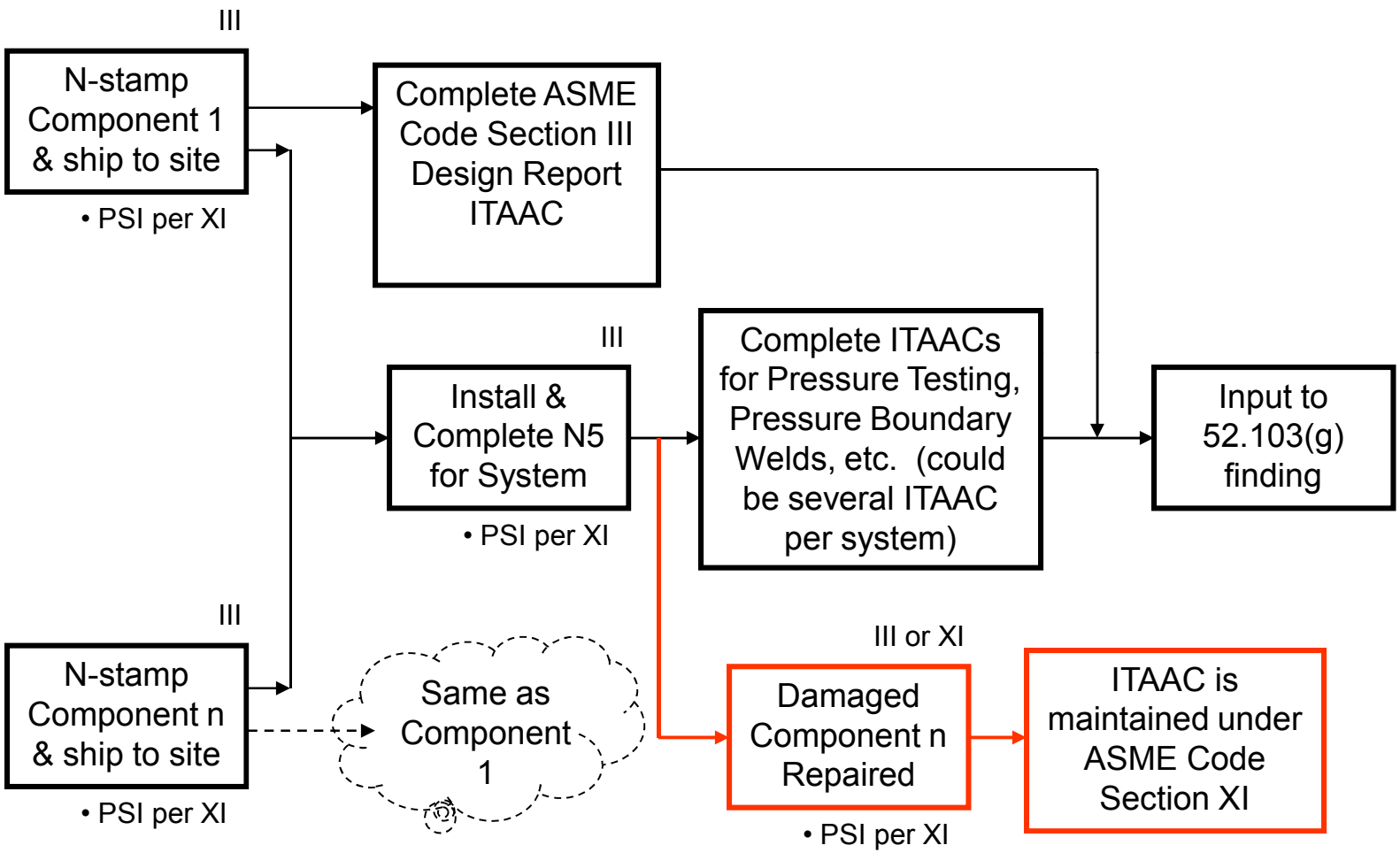
Normal Construction Process Flow Diagram



Normal Process Description

- Section III stamped components are shipped to site with PSI per III & XI already completed.
  - Suppliers also provide ITAAC closure documentation to owner
- Section III components and piping are installed as system, pressure test is completed per III, PSI of field welds is completed per III & XI, and N-5 Data Report is signed.
  - ITAAC closure letters associated w/system construction are submitted
- Preoperational and Startup testing done IAW O&M Code
  - ITAAC closure letters associated with system performance are submitted
- All ITAAC closure letters submitted in support of 52.103(g) finding

Repair Process Flow Diagram



Repair Process Description

- Per Normal Process, N stamped component w/PSI is shipped to site, installed, Pressure tested w/PSI and applicable ITAACs are submitted
- Component subsequently damaged and requires repair or field work. ASME provides 3 alternatives:
  - Ship back to manufacturer and repair under Section III. Not practical for large components.
  - Have manufacturer extend certificate (N stamp) to site and repair under Section III or subcontract to site (NA) certificate holder. Not always practical.
  - Repair under Owner's Section XI program.

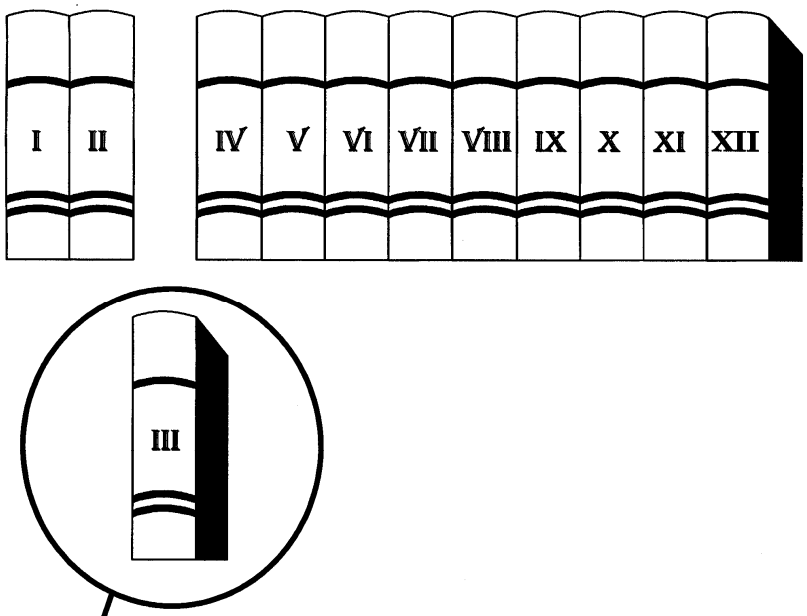
Background on Transitioning from ASME Section III to Section XI

Below are excerpts from the approach employed during Construction, Preoperational and Startup testing of previous generation plants.

- The rules of either ASME III or ASME XI as determined by the Owner, may be applied to the repair or modification of an ‘N’ stamped component subsequent to stamping but prior to the filing of the owner's N-3 Data Report or prior to commercial operation where no N-3 has been filed.

- When repairs or modifications to an ‘N’ stamped component will be performed exclusively under the rules of ASME III, the original manufacturer shall perform the repair/replacement or alternatively the repair/replacement may be performed by a Certificate Holder as a subcontractor to the original manufacturer.

Section III Does Not Stand Alone

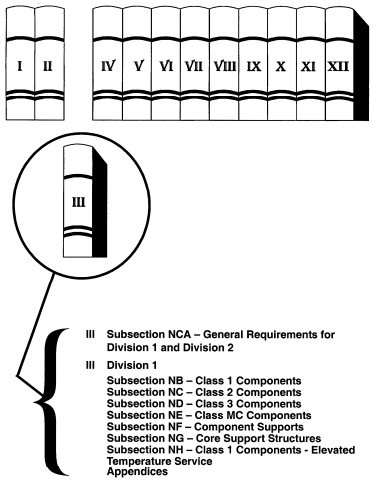


III Subsection NCA – General Requirements for Division 1 and Division 2

III Division 1

Subsection NB – Class 1 Components
Subsection NC – Class 2 Components
Subsection ND – Class 3 Components
Subsection NE – Class MC Components
Subsection NF – Component Supports
Subsection NG – Core Support Structures
Subsection NH – Class 1 Components - Elevated Temperature Service
Appendices

B&PV Is An Integrated Code



Section III references:

- Section II for material specifications and properties
- Section V for non-destructive examination requirements and methods
- Section IX for brazing and welding procedures and qualification
- Section XI for pre-service inspection and testing requirements

Meeting requirements of III requires you to meet applicable requirements of II, III, V, IX and XI

Problems created if COL holder cannot transition from Section III to XI until 10 CFR 52.103(g) finding

- It is not practical or desirable to delay Section XI and OM Code implementation until after the 52.103(g) finding is made.
  - There can be contractual and legal issues with asking a vendor to extend their N-Stamp to the site for repair or replacement of ASME Code Equipment.
  - Many Pre-Operational Tests, including ITAAC, will be done under the OM standard for pumps and valves which require the use of ASME Code Section XI.
  - PSI must be performed to Section XI requirements.
    - It is preferable to perform PSI during the fabrication and installation process rather than after the 52.103(g) finding.

Industry Position

- No changes to Section 50.55a are required
  - Section III-XI transition occurs at the N stamp per existing Code rules