

# Training and Certification

Stephen Cumblidge  
NRC / Industry NDE Technical  
Information Exchange Meeting  
January 16-18, 2018

---

---

# UT Certification

- Currently, UT inspectors are certified via ASME Code Section XI Appendix VII
- Certifications are the responsibility of individual licensees
- Being certified as a Level II requires 800 hours of Experience and a written examination
- A training program is described in Appendix VII Supplement I

---

# Appendix VII

- Appendix VII is largely based on SNT-TC-1A, which was developed in 1963-1964
- The concept that hours of experience and written tests is commonly used in NDE worldwide, including ISO-9712

---

# Questions about Appendix VII

- It is unclear if using the number of experience hours and a written test is the most efficient or effective method to certify inspectors
- There is little guidance as to what constitutes “experience”
- Appendix VIII performance demonstration provides a final check that the inspectors possess the required talent

---

# 2011 Revision to Appendix VII

- In the 2011 Addenda, the number of hours required to achieve a Level II certification was reduced to 400 hours, with a 320 hours being composed of laboratory training and a successful Appendix VIII Supplement 2 examination
  - The revision provides a 90% reduction in experience required to obtain a Level II
  - A weighing factor of 2.25 is given to laboratory practice
- In comparison, ISO-9712 allows a 50% reduction in experience with training having a weighing factor of up to 7

---

# Questions

- Is 80 hours of experience sufficient?
  - More? Less? None?
- How important is experience vs. laboratory practice?
  - Does this depend on the talents of the individual?
- How well do these numbers of hours match knowledge on training programs?

---

# NRC Condition on Appendix VII

- In the 2009-2013 Rulemaking, the NRC imposed the following condition:

The use of Appendix VII Table VII-4110-1 and Appendix VIII Subarticle VIII-2200 of the 2011 Addenda and 2013 Edition of Section XI of the ASME BPV Code is prohibited. When using ASME BPV Code, Section XI editions and addenda later than the 2010 Edition, licensees and applicants must use the prerequisites for ultrasonic examination personnel certifications in Table VII-4110-1 and Subarticle VIII-2200, Appendix VIII in the 2010 Edition.

---

## Reason for Condition:

- “The impact of reduced training and nuclear power plant familiarization is unknown. The ASME BPV Code supplants training hours and field experience without a technical basis, minimum defined training criteria, process details, or standardization.”

---

# Technical Basis?

- This condition was not put in place because the NRC staff found the educed training to be insufficient, but because insufficient evidence had been given that the reduced hours would be effective
- If a technical basis for the revised Appendix VII is provided, the NRC would be open to removing the condition
- This condition will be open for public comments in the next rulemaking

---

# ANDE

- ASME is developing a centralized training and certification program
- The ANDE program is more systematic and detailed than the program described in Appendix VII
- Many details remain to be finalized for ANDE
- The NRC will review the final program when it is completed

---

# The NRC and UT Certification

- While the NRC has some questions about the use of experience hours to certify inspectors, the NRC has no safety concern with the conditioned Appendix VII UT certification system
- The NRC staff recognizes that a more structured training and certification program could be less expensive to licensees and be as effective
- Changes to the training and certification program would require a technical basis

---

# NRC Research into Training

- The NRC has experts in Human Factors and Training
- These experts are conducting a literature review related to training NDE inspectors
- The results will inform future code and rulemaking actions related to Appendix VII

---

# Path Forward

- The NRC has no plans to require any changes to training or certification programs
- The NRC is open to proposed changes to training and certification programs if a sufficient technical basis is provided
- The NRC will be open to public comments about the revisions to Appendix VII in the upcoming 2015-2017 rulemaking