

**NRC Report  
November 2010**

1. Amendment to 10 CFR 50.55a – ASME Code Edition/Addenda

A proposed rule was published in the Federal Register on May 4, 2010 (75 FR 24324). The proposed amendment to 10 CFR 50.55a would incorporate by reference:

- The 2005 Addenda through 2008 Addenda of Section III, Division 1, and Section XI, Division 1, of the *Boiler and Pressure Vessel Code*;
- The 2005 Addenda and 2006 Addenda of the *Code for Operation and Maintenance of Nuclear Power Plants*;
- Code Case N-722-1, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials Section XI, Division 1;" and
- Code Case N-770, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities, Section XI, Division 1."

The rule would also:

- clarify which portions of Section III are approved for use by applicants and licensees
- identify which portions of Section III are NRC requirements, and which portions of Section III are not required to be implemented by 10 CFR 50.55a
- substitute the word "condition(s)" for the words "limitation(s)" "modification(s)" and "provision(s)" throughout 50.55a for consistency
- clarify the time frame for licensees to submit requests for relief based on impracticality for IST and ISI
- allow the use of 1994 Edition of NQA-1, "Quality Assurance Requirements for Nuclear Facility Applications," when using the 2006 Addenda of Section III of the ASME B&PV Code and later editions and addenda.

Finally, the NRC also requested comments on what the scope of the ASME B&PV Code edition and addenda rulemaking should be; how often the NRC should incorporate Code editions and addenda into 10 CFR 50.55a; and in what ways the NRC should communicate the scope, schedule for publishing the rulemakings in the Federal Register, and status of the 10 CFR 50.55a rulemakings to external users.

The public comment period closed on July 19, 2010, and the NRC received 22 public comment letters. The NRC is evaluating the comments. The final rule is scheduled for publication in May 2011.

## 2. ASME Code Case Rulemaking/Regulatory Guides

On October 5, 2010, Regulatory Guide 1.84, Revision 35, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III," and Regulatory Guide 1.147, Revision 16, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," were issued as final guides (75 FR 61530). The guides address Code Cases from Supplement 2 to the 2004 Edition through Supplement 0 to the 2007 Edition (Supplement 0, 2007 Edition also serves as Supplement 12 to the 2004 Edition).

On October 5, 2010, Regulatory Guide 1.193, Revision 3, "ASME Code Cases Not Approved for Use," was issued as a final guide (75 FR 61531).

The NRC staff has completed its review of Supplements 1 – 11 to the 2007 Edition. Draft Revision 36 to RG 1.84, draft Revision 17 to RG 1.147, draft Revision 2 to RG 1.192, and draft Revision 4 to RG 1.193 have been reviewed by the cognizant NRC offices. The draft guides will address Supplements 1 – 10 to the 2007 Edition. The current schedule for publication of the proposed rulemaking to incorporate the guides by reference into 10 CFR 50.55a is March 2011.

The staff has not yet made a determination whether the issues raised by Raymond A. West in a petition for rulemaking dated December 14, 2007, and revised on December 19, 2007, will be considered in the proposed rulemaking for Revision 17 of Regulatory Guide 1.147.

## 3. Risk-Informed Activities

On December 1, 2009, Westinghouse submitted a revised Pressurized Water Reactor Owners Group (PWROG) plan to the NRC for implementation of WCAP- 16168-NP-A, Revision 2, "Risk-Informed Extension of the Reactor Vessel In-Service Inspection Interval" (Agencywide Documents Accession and Management System [ADAMS] No. ML093370133). The implementation plan was revised as a result of three recent changes in inspection requirements: 1) MRP-139 and ASME Section XI Code Case N-770 - Inspection and Mitigation of Alloy 82/182 Reactor Vessel Nozzle Welds, 2) MRP-227 - Inspection and Evaluation Guidelines for PWR Reactor Vessel Internals, and 3) 10 CFR 50.61a- Alternate Pressurized Thermal Shock Rule.

## 4. Generic Activities on Material Degradation/PWR Alloy 600/182/82 PWSCC

In 2006 ASME started the development of a Code Case for inspection of Alloy 82/182 butt welds. Code Case N-770 was developed to address inspection of these welds, and the NRC included the Code Case in the recently published proposed amendment to 10 CFR 50.55a (see #1 above). NRC staff are currently reviewing public comments on the proposed rule to address NRC conditions and the inclusion of ASME Code Case N-770-1 in lieu of N-770 in the final rule.

The NRC staff continues to monitor and evaluate operating experience to ensure that the current inspection schedules are adequate.

The staff developed Regulatory Issue Summary 2010-07, "Regulatory Requirements for Application of Weld Overlays and Other Mitigation Techniques in Piping Systems Approved for

Leak-Before-Break,” on the regulatory requirements for application of weld overlays and other mitigation techniques in piping systems approved for leak-before-break (LBB).

On October 28, 2010, the NRC facilitated an all-day public meeting regarding Regulatory Issue Summary 2010-07, “Regulatory Requirements for Application of Weld Overlays and Other Mitigation Techniques in Piping Systems Approved for Leak-Before-Break”. The purposes of the meeting were (1) for the NRC to provide additional clarification on the RIS, (2) for various vendors to present their LBB analysis of overlaid Alloy 82/182 dissimilar butt welds on LBB piping, and (3) for the NRC and industry to generate an acceptable LBB analysis methodology for the generic application. NRC meeting slides are available under Agencywide Documents Access and Management System (ADAMS) Accession No. ML102990273. A meeting summary will be available within approximately 30 days.

#### 5. New Reactor Licensing Activities

The New Reactor Licensing public web-site <http://nrr10.nrc.gov/NRO/new-rx-status/index.cfm> has a list of expected new nuclear power plant applications, and an estimated schedule by fiscal year for new reactor licensing applications.

##### New Reactor Licensing Status

As of October 30, 2010, the status of new reactors licensing under 10 CFR Part 52 is as follows:

##### Design Certification

NRC has issued four design certifications to date (ABWR, System 80+, AP-600, and AP-1000). These are certified in 10 CFR Part 52, Appendices A, B, C, and D, respectively. The NRC is currently reviewing four design certifications:

- General Electric-Hitachi’s ESBWR (first passive BWR)
- AREVA’s EPR (evolutionary pressurized-water reactor)
- Mitsubishi Heavy Industries’ US-APWR (advanced pressurized water reactor)
- AP-1000 Revision 17 (first amended design certification)

In addition, the ABWR design certification will be submitted to the NRC shortly for renewal pursuant to 10 CFR 52.59. The ABWR design certification renewal will be submitted by GEH and Toshiba as separate design certification renewals.

##### Early Site Permits (ESPs)

NRC has issued four ESPs to date (Clinton, Grand Gulf, North Anna, and Vogtle). The NRC’s issuance of the Vogtle ESP on August 26, 2009, is the first to be based on a specific technology (AP-1000) and the first to include a limited-work authorization (LWA). The NRC received an application for an ESP for the Victoria County Station submitted by Exelon on March 25, 2010. This is the first ESP application for a greenfield site with no specific technology established at this time.

The NRC received an ESP application for the PSEG site in New Jersey (same site as Hope Creek and Salem 1&2). The ESP application was tendered on May 25, 2010, and is currently undergoing an acceptance review. The NRC's acceptance decision is expected at the end of July 2010.

#### Combined License (COL) Applications

The North Anna, Unit 3 COLA was revised on June 29, 2010, to change its standard plant design from an ESBWR to a US-APWR.

NRC is currently reviewing 12 COL applications (20 new reactor units):

- 1 ABWR South Texas Project 3 and 4
- 7 AP-1000 Vogtle 3&4, William S. Lee Station 1&2, Shearon Harris 2&3, V.C. Summer 2&3, Levy County 1&2, Bellefonte 3&4\*, and Turkey Point 6&7
- 4 ESBWR Fermi 3, Grand Gulf 3\*, River Bend 3\*, Victoria County 1 and 2\*\*
- 3 EPR Calvert Cliffs 3, Nine Mile Point 3\*, Bell Bend, Callaway 2\*
- 2 US-APWR Comanche Peak Units 3 and 4, North Anna 3

\* NRC staff review suspended at request of applicant.

\*\* Application withdrawn

#### Advanced Reactors Program

NRC has established an advanced reactors program in the Office of New Reactors. Currently there are no applications under review, but several applications are expected to be submitted in the next three years including:

- High Temperature Gas-Cooled Reactors:
  - Next Generation Nuclear Plant (DOE) –Pre-application interactions underway, Design Certification application expected in FY-2014
- Small and Medium-size LWRs:
  - NuScale (iPWR) – Pre-application interactions underway; Design Certification application expected in Q1 of FY-2012
  - B&W mPower (iPWR)– Pre-application interactions underway; Design Certification application expected in Q4 of FY-2012
  - Unannounced iPWR - Design Certification application expected as early as FY-2013
- Liquid Metal Fast Reactors:
  - GE-H PRSIM – Prototype COL application expected as early as FY-2013
  - Toshiba 4S – Design Approval application expected as early as FY-2013

- Hyperion – pre-application activities initiated; prototype COL application as early as FY-2013

### NRO Vendor Inspection

The NRO vendor inspection program is described in Inspection Manual Chapter (IMC) 2507, “Construction Inspection Program, Vendor Inspection.” This IMC will be implemented by various Inspection Procedures (IPs) including:

- IP 43002: Routine Inspections of Nuclear Vendors;
- IP 43003: Reactive Inspections of Nuclear Vendors;
- IP 43004: Inspection of Commercial-Grade Dedication Programs;
- IP 43005: NRC Oversight of Third Party Organizations Implementing Quality Assurance Requirements; and
- IP 36100: Inspection of 10 CFR Parts 21 and 50.55(e) Programs for Reporting Defects and Noncompliance.

### *FY 11 Vendor Inspection Plans*

- Commercial grade dedication organizations
- Manufacturing for valves (all new reactor Design Centers)
- AP1000 modular construction
- Manufacturing for steam generator tubes for AP1000
- Digital Instrumentation and Control for AP1000, USAPWR, and ABWR
- STP ABWR mechanical component fabrication
- AP1000 CRDMs
- AP1000 Engineering Design Verification

### *Vendor Inspection Reports completed, issued and planned inspections*

- Mangiarotti, Udine, Italy (AP1000 components) – issued
- Bechtel, Frederick, MD - issued
- Tyco Electronics, Fairview, NC, - issued
- Black and Veatch, Kansas City, MO – issued
- IHI, Yokohama, Japan (AP1000 containments & STP ABWR) – completed
- Consolidated Power, Birmingham, AL - scheduled

Vendor Inspections continue to identify findings related to commercial grade dedication activities and inadequate Part 21 programs for evaluating and reporting of defects that could cause a substantial safety hazard.

Previously issued NRC inspection and trip reports can be located at

<http://www.nrc.gov/reactors/new-reactors/oversight/quality-assurance/vendor-insp.html>

Multinational Design Evaluation Program (MDEP) Vendor Inspection Cooperation Working Group (VICWG) activities:

MDEP is a multinational initiative to develop innovative approaches to leverage the resources and knowledge of mature, experienced national regulatory authorities who will be tasked with the regulatory design review of new reactor plant designs. One of the issue-specific working groups established under the MDEP organization is the Codes and Standards Working Group (CSWG) whose goal is to achieve harmonization of Code requirements for pressure-boundary components.

Harmonizing pressure-boundary Codes used by member countries would ensure a consistent level of quality and safety in the design of pressure-boundary components such as the reactor vessel, piping, pumps, and valves and allow components manufactured in other countries to be used in member countries with a relatively minor review and reconciliation of Code differences. Such an approach would significantly simplify the licensing of nuclear power plants and reduce the burden on the regulatory authorities on an international scale.

The MDEP/CSWG has been working with standards development organizations (SDOs) from several countries (i.e., U.S., Japan, Korea, France, Canada and, recently, the Russian Federation) for the past 2 ½ years to compare each countries' pressure-boundary Code requirements for Class 1 vessels, piping, pumps and valves to the requirements of the ASME Boiler and Pressure Vessel Code, Section III. Similarities and differences are being documented in a database table. The Code-comparison effort is the first step to achieve harmonization of pressure-boundary codes and standards. The Code-comparison tables are essentially complete for Class 1 vessels, piping, pumps and valves for Korea, Japan, and France with Canada following shortly thereafter. The ASME is working with the SDOs to develop a report summarizing the findings of the Code comparisons. The final report is expected to be issued by December 2010. Russia recently initiated a comparison of its pressure-boundary code for Class 1 vessels, piping, pumps and valves. The SDOs from Japan, France, Canada, Russia and the U.S. met at the OECD Nuclear Energy Agency's offices on April 8-9, 2010 to discuss with the MDEP/CSWG their results and significant findings from its Code comparisons. The MDEP/CSWG presented to the SDOs its conceptual plan to harmonize pressure-boundary codes and standards on an international level. The MDEP/CSWG plans to issue a letter to each of the SDOs requesting support to harmonize pressure-boundary codes and standards and to consider how further divergence of code requirements can be prevented. The next MDEP/CSWG meeting is tentatively planned to be held in Paris, France in November 16-18, 2010 (without the SDOs) after the ASME Boiler Code meetings in Vancouver, Canada. Several MDEP/CSWG representatives plan to attend the SDO meeting in Vancouver on November 1, 2010.

### Part 21 Rulemaking

NRO has identified several potential problems with Part 21 which they would like to correct through a comprehensive rulemaking. NRO is collaborating with NRR, NMSS, FSME and OGC to collect all identified problem areas and high-level solutions. The offices will collectively decide whether or not to address the problems through a rulemaking, which office would lead that rulemaking, and under what schedule and budget it would be performed. In the short term, NRO would first like to undertake a rulemaking to establish the applicability of the four key definitions associated with the dedication process to 10 CFR Part 52 facilities and

activities. Under the current 10 CFR Part 21 regulation, it appears that dedication is not an option for facilities and activities licensed under 10 CFR Part 52. This was unintentionally omitted from the previous Part 52 update. *The staff is planning to add this scope to the planned Part 52 supplemental rulemaking beginning in FY 2011.*

In the longer term, NRO would also like to undertake a rulemaking to reorganize and clarify the requirements of 10 CFR Part 21. NRO, NRR, NMSS, FSME, ADM and OGC have discussed problems with Part 21 and acknowledge the need to revise Part 21.

## 6. LICENSE RENEWAL ACTIVITIES

There are several on-going activities in license renewal. The current status of applications and approvals is:

### Current status of applications, staff reviews and approvals is:

- 59 units approved
- 16 applications (23 units) under review
  - 2 (2 units) awaiting final approval (Pilgrim and Vermont Yankee)
  - 2 (2 units) awaiting license issuance (Cooper and Duane Arnold)
  - 2 (4 units) completed ACRS full committee (Indian Point 2 & 3, Prairie Island 1 & 2)
  - 2 (4 units) awaiting ACRS full committee (Kewaunee 11/10 and Palo Verde 1/2/3 2/11)
  - 5 (7 units) awaiting ACRS subcommittee (Crystal River 1/11, Hope Creek 11/10, Salem 1 & 2 12/10, Diablo Canyon 1 & 2 2/11 and Columbia 4/11)
  - 3 (4 units) applications received (Seabrook, Davis-Besse, and South Texas Project 1 & 2 )
- 3 applications with scheduled application dates through 2011
  - July 2011 – Grand Gulf
  - September 2011 – Limerick 1 & 2
  - October 2011 – Callaway
  - Others staggered out to 2017

Seven plants have entered the operating period beyond 40 years:

- Oyster Creek – April 9, 2009
- Nine Mile Point Unit 1 – August 22, 2009
- Ginna – September 19, 2009
- Dresden Unit 2 – December 22, 2009
- H.B. Robinson – July 31, 2010
- Monticello – September 8, 2010
- Point Beach Unit 1 – October 5, 2010

### Revision of Generic Aging Lessons Learned (GALL) Report (NUREG-1801)

NRC has an on-going internal activity to develop an update of the GALL report and the License Renewal Standard Review Plan (SRP). This revision is comprehensive in nature, including

consideration of aging management programs (AMPs), aging management review (AMR) line items from the GALL tables, and the SRP.

NRC staff will modify the GALL Report to address concerns raised by ASME about use of Section XI Code Editions, Relief Requests, and Code Cases for license renewal, consistent with the summary of the NRC-ASME teleconference held on August 10, 2009 (see (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092440512, available on the NRC web site [<http://www.nrc.gov>]).

The final revision 2 of the GALL report and the SRP will be issued in December 2010.

The status and schedule for this revision can be tracked at:

<http://www.nrc.gov/reactors/operating/licensing/renewal/guidance/updated-guidance.html>

### Technical Issues

Recent reviews of license renewal applications and plant operating experience have identified issues in several areas, as described below. These issues have resulted in changes to the revised GALL report, along with discussions with applicants with on-going reviews.

- Neutron Absorbers
  - Interim Staff Guidance (ISG) for Boral and other neutron absorber materials was issued as final on May 4, 2010 (LR-ISG-2009-01, “Aging Management of Spent Fuel Pool Neutron-Absorbing Materials Other Than Boraflex,” ADAMS Accession No. ML100621321).
- Buried Piping
  - Recent operating experience, including tritium releases. NRC has initiated on-going interactions with NEI, EPRI, INPO and NACE.
  - Use of cathodic protection as a preventative measure.
- Socket Welds
  - Need for non-visual examinations to ensure integrity of these welds.
- Metal Fatigue
  - Additional information routinely requested for NRC reviews (dissolved oxygen, cycle counting, etc.). RIS 2008-030 describes the need to use six stress components instead of one to assure conservative fatigue calculations.
- Containment Liner
  - Corrosion identified at several plants.
  - NRC is completing an activity to review operating experience and assess likelihood of corrosion occurrence.
- Concrete Containment
  - Delamination at tendon thickness location identified at one plant.
- Inaccessible Medium Voltage Cables (> 480 v)
  - Cables in potentially submerged environment not qualified for continuous submergence.
- Steam Generator Divider Plates and Tube-to-Tubesheet Welds
  - Foreign operating experience with cracking in Alloy 600 divider plates and/or 82/182 welds – concern with cracks extending to the pressure boundary.

- Concern with cracking of tube-to-tubesheet welds with chromium content below that of Alloy 690 (consistency of once-through and recirculating steam generators).

Technical and Regulatory Bases for Second Renewal (Life Beyond 60)

NRC has initiated an activity to ensure adequate technical and regulatory bases for review of second license renewal applications, for operation to 80 years. Current activities include:

- Annual workshops to monitor industry/international technical progress
- Expand proactive materials degradation assessment to cover 80 years
- Collect/evaluate results from licensee implementation of license renewal aging management programs
- Continue and expand domestic and international partnerships

Two upcoming meetings will consider this issue:

- The “Second Workshop on U.S. Nuclear Power Plant Life Extension Research and Development,” February 22 – 24, 2011, in the Washington, DC, metropolitan area
- A Regulatory Information Conference double session on materials aging and license renewal in early March 2011.

7. Buried Piping

Recent leaks from buried piping at nuclear power plants have caused the NRC to undertake a focused look at how underground piping is designed, maintained, and inspected to ensure structural integrity and to prevent leaks that could harm the environment. These leaks generated significant stakeholder interest, including inquiries from several congressmen. On December 2, 2009, the NRC staff responded to the Chairman’s memorandum dated September 3, 2009, ADAMS No. ML092460648, tasking the staff to describe the activities currently underway or planned addressing the issue of leaks from buried piping. The response is SECY-09-0174, “Staff Progress in Evaluation of Buried Piping at Nuclear Reactor Facilities,” and can be found at <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2009/>. Actions described in the SECY are being tracked in a buried piping action plan (ADAMS No. ML102590171).

A new Code Case N-XXX is under development to address underground piping systems. The staff has identified several areas that are not yet addressed, or require significant additional detail. The staff has provided its comments to Section III.

With regard to the integrity of buried piping systems and the prevention of groundwater contamination, the staff has initiated discussions with cognizant ASME committees regarding three issues. The first issue is that the Section III Code Cases currently under development do not address the ASME Code requirement for the design and arrangement of system components to allow for adequate access and clearances to conduct examination and tests. Lack of access for the inspection of buried safety-related Class 3 service water system (SWS) piping has been identified as a serious issue relative to ensuring piping integrity. The second issue is the need to re-examine the scope of buried piping in the ASME Code. Presently, the ASME Code only addresses safety-related Class 3 SWS piping. Leakage of contaminated

fluids from other buried piping systems has been reported. Leakage from these systems can affect system operation and may have radiological impacts. Accordingly, the staff submitted an Issue Sheet to the Subgroup on Industry Experience for New Plants for consideration. The staff proposed that Section III consider the development of requirements addressing accessibility for inspection of buried piping. Systems to be included would be based on considerations such as function and consequence. The staff also proposed that Section XI consider the development of requirements addressing the inspection of buried piping for new plants. The inspection of buried piping at operating plants is the third issue. The staff is concerned that: ASME Code required testing and surveillance requirements for Class 3 buried piping do not appear to be sufficient to identify corrosion, degradation and leakage; and leaks from other buried piping systems carrying tritium were discovered through voluntary licensee monitoring for radioactive tritium in groundwater monitoring wells rather than through inspection, testing, or monitoring of the piping.

With regard to Class 3 buried piping, the Class 3 buried piping pressure boundary has degraded and become compromised at several plants. In some cases, the degradation was significant but had not yet challenged structural integrity. Current ASME Code requirements are not sufficient to identify either degradation or a leak. If left undiscovered, degradation of buried Class 3 piping could progress to a point that structural integrity is threatened, particularly for piping that experiences general coating failure followed by general corrosion. If such a system contains tritium, groundwater monitoring would indicate the presence of a leak. For those piping systems that do not contain tritium, however, neither groundwater monitoring nor inspection or Code-required testing would identify degradation, and the piping could continue to deteriorate until there is loss of function.

With regard to buried piping other than Class 3, industry assessments have shown that it is important to maintain the integrity of these systems as they can affect the reliability of plant operation and can have radiological and environmental impacts. The industry has initiated a number of activities. Section XI should assess these activities with regard to the need for inspection and testing.

With regard to Code Case N-755 regarding the use of high density polyethylene piping for underground systems, the staff has identified issues to Section III related to design life, joining, and non-destructive examination that will need to be addressed for the staff to endorse the Code Case.

#### 8. NRC Information Notice 2010-21

On October 6, 2010, the NRC issued Information Notice 2010-21, "Crack-Like Indication in the U-Bend Region of a Thermally Treated Alloy 600 Steam Generator Tube" (ADAMS No. ML102210244). The U.S. Nuclear Regulatory Commission (NRC) issued this information notice because the findings at Vogtle, Unit 1 are particularly noteworthy because this is the first confirmed instance of cracking in the U-bend region of a thermally treated Alloy 600 tube. Cracking previously reported by the industry had been in tubes made with mill-annealed Alloy 600 tubing [in the units with mill-annealed Alloy 600 tubing, the U-bends were typically not stress relieved after bending (Note: Although NRC IN 97-26 indicates that an axial indication was discovered in the U-bend region of a thermally treated Alloy 600 tube at Braidwood Station, Unit 2, subsequent evaluation indicated that this indication was not a crack)].

## 9. NRC Information Notice 2010-14

On August 4, 2010, the NRC issued Information Notice 2010-14, "Containment Concrete Surface Condition Examination Frequency and Acceptance Criteria," (ADAMS No. 101600151) to inform addressees of recent issues identified by the NRC staff during license renewal application (LRA) review audits at different nuclear power plant sites concerning the containment concrete surface condition examination frequency and acceptance criteria. During recent LRA audits, the NRC staff found that some nuclear plant licensees did not meet the requirements for containment concrete surface examinations specified in 10 CFR 50.55a, "Codes and Standards," dated August 8, 1996, and in Article IWL-2510, "Surface Examination," of Subsection IWL, "Requirements for Class CC Concrete Components of Light-Water-Cooled Power Plants," of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Specifically, 10 CFR 50.55a incorporates, by reference, Subsection IWL, which requires periodic inservice inspections (ISIs) of containment concrete. Paragraph IWL-2410(a), as modified by 10 CFR 50.55a(g)(6)(ii)(B)(2) based on the final rulemaking of August 8, 1996, states, "Concrete shall be examined in accordance with IWL-2510...[at all operating nuclear power plants by September 9, 2001] and every 5 years thereafter." However, during recent LRA audits of some multiple-unit nuclear power plants, the NRC staff found that some licensees of pressurized-water reactor (PWR) plants have been performing the containment concrete condition surface examination every 10 years. The NRC staff also found that the containment concrete surface degradation quantitative acceptance criteria used by the licensees for the ASME Section XI, Subsection IWL, aging management program (AMP) were significantly less stringent than the acceptance criteria specified in American Concrete Institute (ACI) 201.1, "Guide for Making a Condition Survey of Concrete in Service," and ACI 349.3R, "Evaluation of Existing Nuclear Safety-Related Concrete Structures." NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 1, Volume 2, "Tabulation of Results," issued September 2005, states that the evaluation of concrete containment in accordance with 10 CFR 50.55a and Subsection IWL is part of an AMP for license renewal. AMP XI.S2, "ASME Section XI, Subsection IWL," in the GALL Report states that Article IWL-2400 specifies the frequency of concrete inspection. In addition, AMP XI.S2 states that concrete acceptance criteria are qualitative and that guidance is provided in Article IWL-2510, which references ACI 201.1 for the identification of concrete degradation. Quantitative acceptance criteria based on the evaluation criteria provided in Chapter 5 of ACI 349.3R should also be used to augment the qualitative assessment of the responsible engineer.

## 10. ASME NDE

The NRC has awarded a grant to ASME Standards Technology to support the development of the ASME NDE Personnel Certification Program (ANDE). The objective of the program is to create a third party NDE certification organization to provide a central NDE/QC certification program administered through ASME and governed by a committee of industry experts. The purpose of ANDE is to increase the quality and predictability of NDE and inspection, and provide a process for having transportable certification credentials meeting the Code. In alignment with the NRC's safety goal to ensure the adequate protection of public health and safety and the environment, support of this program will enable development of a program that will ensure that NDE personnel conducting examinations in nuclear facilities are adequately

trained, qualified and certified. On January 12, 2010, the NRC transmitted a letter to the ASME (ADAMS No. MI100140091) related to its concerns regarding questionable qualifications of NDE personnel as related to the American Society for Nondestructive Testing as referenced by the ASME.

#### 11. EPRI/NRC UT/RT Workshop

The Electric Power Research Institute and NRC are sponsoring the 2011 International Workshop on Advances in Digital Radiography and Ultrasonics in Lieu of Radiography, on March 15-16, 2011, tentatively scheduled at the Buena Vista Palace Resort and Hotel, Orlando, FL. The purpose of the workshop is to provide a forum for researchers and practitioners in industry, academia, and government to exchange information on the latest developments in ultrasonic nondestructive evaluation and digital radiography, and their potential to replace film-based radiography.

The NRC conducted a gap analysis through Pacific Northwest National Laboratory to determine what research had been conducted in order to:

- Compare the flaw detection capabilities of UT and RT
- Assess parameters such as false call rates
- Assess qualification and acceptance standards
- Assess the effectiveness and reliability of UT and RT for construction, preservice and inservice inspection
- Assess the interchangeability of UT and RT
- Determine the state-of-the-art with regard to digital radiography.

A review of the many journal and conference papers, and technical reports revealed that most of the studies were directed toward particular industries and specific experimental parameters. In addition, the data from these studies were sometimes contradictory. Thus, a workshop is being held to bring experts together to facilitate an exchange of information and discuss potential paths forward.

#### 12. NRC/ASME Board of Directors Meeting

A coordination meeting was held between NRC management and representatives of the ASME Board of Directors on October, 15, 2010, at the NRC's headquarters. The meeting had two principal objectives: 1) provide staff a better understanding of the role of the board of directors within the ASME, and their impact on interactions between the staff and the society; and 2) provide Board of Directors with understanding of the needs of the NRC as a stakeholder, especially in the area of the ASME Boiler and Pressure Vessel Code. The participants agreed that the objectives of the meeting had been achieved and were satisfied that the current interactions between the organizations are satisfactory.

#### 13. 2011 Regulatory Information Conference

The Regulatory Information Conference will be held March 8-10, 2011, at the Marriott Bethesda North Hotel and Conference Center. A session which will be of interest to the ASME and its volunteers is: Description — Currently, consensus standards are being developed/updated in a

number of significant areas. This session will discuss capturing limitations of non-destructive examination techniques, developing codes and standards for materials in advanced reactors, and integrating operating experience. In addition, new reactor design and construction as well as the international harmonization of standards will be addressed.