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DOCKETED
USNRC

October 18, 2001 (12:34PM)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

DOCKET NUMBER
PROPOSED RULE PR 50
(66FR 40626)

October 17, 2001

Secretary
U.S. Nuclear Regulatory Commission
Washington, CC 20555-0001
Attn: Rulemaking and Adjudications Staff

Gentlemen:

ULNRC-4541

AmerenUE

Comments on Proposed Rule and Withdrawal of Proposed Rule,
10 CFR 50.55a, Industry Codes and Standards; Amended Requirements

In the Federal Register (August 3, 2001), the NRC requested comments on the proposal to amend its regulations to incorporate by reference a later edition and addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPV Code) and the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM Code) to provide updated rules for construction, inservice inspection (ISI), and inservice testing (IST) of components in light-water cooled nuclear power plants. The proposed rule identifies the latest edition and addenda of the ASME BPV and OM Codes that have been approved for use by the NRC subject to certain limitations and modifications. The NRC also proposes withdrawing a supplemental proposed rule that would have eliminated the requirement for licensees to update their ISI and IST programs every 120 months to the latest ASME Code edition and addenda incorporated by reference in the regulations.

AmerenUE has participated in the STARS utilities review of the proposed rule and endorses the comments submitted by STARS. In addition to the STARS comments, AmerenUE is providing the attached additional comments to the proposed amendment for your consideration.

If you have any questions on our comments, please contact us.

Very truly yours,

for John D. Blosser
Manager-Regulatory Affairs

BFH/

Attachments

Template = SECY-067

SECY-02

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The following comments apply to the Proposed rule and withdrawal of proposed rule dated August 3, 2001. AmerenUE Callaway Plant welcomes the opportunity to participate in the rulemaking process.

Owner defined

The refusal to allow "Owner defined" requirements in all but a few minor cases has disturbing implications. "Owner defined" refers to requirements, programs and policies that are not mandated in detail by the Code, but rather are created and maintained by the Owner where acceptance criteria or inspection guidance may be unique to specific plant configurations.

The Code authors have accepted the argument that these requirements, programs and policies are best managed by the Owner because this allows each site to develop and implement tailored resolutions to plant specific issues and problems. The NRC takes the position that a rigid blanket approach to these issues industry wide is preferable, though no evidence of the benefits of this is offered. Example 1 (Attachment 2) provides an example of the benefits of utilizing "Owner defined" requirements.

Since the proposed rewrite cites "A licensee could redefine these requirements at any time", it can be presumed that this is a trust issue with the NRC. "Owner defined" is not free license; these requirements, programs and policies are required to meet quality (Appendix B to Part 50) requirements. Criterion XVI requirements also still apply. Should the Staff take exception to Owner defined requirements, programs and policies it can invoke rules or requirements beyond any defined by the owner.

Bolting Acceptance Standard

The proposed change to 10 CFR 50.55a(b)(2)(ix)(H) would require licensees to use either volumetric or surface examination flaw criteria for the results of a containment surface visual examination. A better examination criterion for a visual examination of bolting can be found in IWB-3517.

Containment Penetration Piping

The proposed limitation in 10 CFR 50.55a(b)(2)(xii)(A) would not allow welds in high-energy fluid system piping that are located inside a containment penetration assembly or encapsulated by a guard pipe to be exempted from examination provisions of Subsection IWC as permitted by IWC-1223 of the 1997 Addenda and later editions and addenda. This exemption was based on industry experience and evaluation. The case that the NRC makes (i.e., that it "conflicts with the 'Break exclusion zone' design and examination criteria developed by the NRC...") is invalid. NRC criteria are independent of ASME Code rules and can be developed and enforced at NRC discretion. This proposal acts to force Codification of NRC positions.

Moreover, "Break Exclusion Zone" rules should be re-evaluated in light of industry experience and ASME Committee research and evaluation.

Appendix J Requirements

Code Case N-522 dealt with the pressure test requirements for non-safety system piping that is classified as Code Class 2 only for that portion that has a containment penetration function. These alternatives were incorporated into the Code in 1997. Systems that penetrate containment may have a primary classification of Class 2, 3 or non-Code. However, the portion of the system that penetrates primary containment is required to be classified, at a minimum, as Class 2 since this piping is part of the primary containment pressure boundary. The metal containment structure is designed and constructed to Code Class MC requirements, however,

there exists no Class MC requirements for piping. ASME Class 2 was invoked to provide acceptable design rules for penetrations.

For system piping that performs a safety function and is classified as Code Class 2, regardless of its containment penetration function, it is appropriate to impose Class 2 pressure test requirements. However, for those segments of piping, whose function is outside the scope of ASME Section XI (fire protection, service water, etc.), the pressure testing requirements of Class 2 are inappropriate and redundant. The containment integrated leak rate test (ILRT) and local leak rate test (LLRT) requirements, mandated by Appendix J of 10 CFR 50, are specifically designed to test the containment pressure boundary function of this piping.

System Leakage Tests

The proposed revision does not allow the deletion of the provision requiring 10-minute (uninsulated) and 4 hour (insulated) hold times. There is no technical basis provided for the retention of hold times. The statement, "...the capability to detect and locate a small leak is directly proportional to the hold times of a pressurized system, particularly if the system is insulated" is correct. However, other important factors, including differential pressure, leak size and boric acid concentration of the leaking fluid are ignored. Statement 2 "System leakage tests, if performed..." is a reiteration of statement 1; therefore, the same arguments apply.

An understanding of how earlier code editions used hold times and how and why they were removed from more recent code editions is helpful. In the 1989 Edition, there were five pressure tests described. They are system leakage tests, system functional tests, system inservice tests, system hydrostatic tests and pneumatic tests. The pneumatic test is irrelevant to this discussion and will not be further described here.

A general description of these leak tests and their general use follows: 1) The system leakage test was provided as a retest for Class 1 systems following system breach (opening the RCS for refuel operation). 2) The system functional test was provided for testing Class 2 or 3 systems that function in standby mode during normal operations. 3) The system inservice test was intended to be a regularly scheduled examination of systems in operation. 4) Finally, the hydrostatic test was provided to test systems following repair and replacement activities.

Class 1 systems are subject to heat up and cool down limits and operational considerations that result in long periods at elevated pressure prior to arriving at normal operating temperature and pressure. Because of the long time that it takes to achieve normal operating pressure following a refuel (due to heatup limits and operational concerns), a hold time was not required for system leakage tests.

For system functional tests, in order to encompass systems that might not be in service prior to performance of the test, a 10-minute holding time was required. For systems that are already in operation, the system inservice test only required verification that the system has been in operation for 4 hours.

Finally, only the hydrostatic test differentiated between insulated and noninsulated systems. The hydrostatic test required a 4-hour hold time for insulated systems and 10 minutes for noninsulated systems.

The newer editions of ASME Section XI (later than 1995) change the terminology of pressure testing. The system leakage test subsumed the old system leakage test, functional test, and inservice test. Emphasis was placed upon where the requirement for the test originated in order to ensure that requirements specific to the old test were included in the newer testing requirements. For example, if repair and replacement activities directed a test (IWA-4540), the hold time requirement of 4 hours (insulated) and 10 minutes (uninsulated) is mandated. Note that this requirement is more conservative than the 1989 Edition requirement.

The proposed 10 CFR 50.55a rewrite does little to restore the old intent and usage of these tests. The rewrite arbitrarily picks the 10 minute for insulated or 4 hour for uninsulated hold times from hydrostatic test rules of earlier Codes. A clearer course of action would be to require all pressure testing be done to the 1989 edition requirements with associated hold times and leak test types. An even better course of action would be to allow the newer editions to be utilized as written.

The experience of Callaway is that there is little correlation between hold times and leakage identification. There are instances of leaks being identified immediately. Likewise, there are incidences of leakages not being identified until long after the surveillance is completed.

Obviously, the goal is to identify the smallest leaks possible at the earliest opportunity. To achieve that will require a realistic expectation on the part of the NRC. A position that zero pressure boundary leakage is acceptable does not lend itself to the establishment of realistic hold time requirements. In the absence of a quantifiable value, an engineering evaluation is impossible.

The reality remains, however, that a blanket insistence on hold times is operationally unsatisfactory. A few examples of problems are listed below:

- A ten-minute hold time can be too long for systems that negatively impact reactivity control.
- Some non-Q systems that penetrate containment typically operate at pressure for a few seconds. An example would be the containment sump discharge lines. To operate for ten continuous minutes would require flooding the sump at a rate equal to or greater than the pump capacity, which presents contamination, and flooding concerns.
- Many pumps have a 30-minute limit (or less) when operated at minimum flow.
- In order to pressurize portions of the Safety Injection system at Callaway, the RHR system and SI system must be operated in a "piggy back" mode and be injecting into the RCS (typically done during flood-up). It is not possible to operate these systems for four hours.
- Insulated systems that operate at a vacuum are obviously insensitive to hold-times.

Because of these reasons, mandatory hold times are not practical and will lead to operational conflicts. These conflicts will then lead to excessive relief requests submittals which will tax both the utility's and the NRC's resources. The requirement for identification of leakage remains, however. Perhaps 10 CFR 50.55a language such as, "The applicable portion of the system shall be at test pressure for a sufficient time to locate leakage consistent with plant operational requirements" would suffice to communicate the NRCs concern that time be allowed to detect small leaks.

Certification of Nondestructive Examination (NDE) Personnel (Periodicity)

The Summary of Proposed Revisions to 10 CFR 50.55a, paragraph 2.2.5, states "The proficiency of (Level I and Level II NDE) examination personnel decreases over time, and available data do not support recertification examinations at a frequency of every 5 years." ANSI/ASNT CP189 defines experience as "Actual performance or observation conducted during work time resulting in the acquisition of skill and knowledge. Classroom or laboratory training time or both shall not be considered as experience." The more time and experience an examiner has, the greater the skill and knowledge and thus the higher the proficiency. The assumption of

decreasing skill with time made in paragraph 2.2.5 is invalid and in conflict with the established ANSI standard and industry experience.

The "available data" the NRC is citing to make such a broad statement is unclear. Contrary to the NRC's conclusion, it has been Callaway's experience that there is no decrease in the proficiency of our examiners as they gain experience, as evidenced by a 100% pass rate proven by examination. Additionally, our NDE personnel routinely perform examinations in the disciplines for which they are certified. Callaway also performs annual reviews of our NDE personnel.

It is therefore recommended that the Certification requirements of Nondestructive Examination (NDE) personnel remain at a 5-year interval as required by IWA-2314.

Certification of Nondestructive Examination (NDE) Personnel (VT-2)

The proposed modification in 10 CFR 50.55a(b)(2)(xviii)(B) would supplement the alternative qualification provisions for VT-2 examination personnel. This would nullify the benefits that the changes to the VT-2 qualification requirements achieved.

There are three visual examinations prescribed by ASME Section XI. They are VT-1, VT-2, and VT-3. VT-1 and VT-3 examinations are performed to determine material condition, whereas, the VT-2 is a visual examination to identify system leakage. Because of the fundamental difference between the VT-2 examination and the other visual examinations, it is appropriate that the qualification requirements be different for VT-2 examination personnel.

IWA-2316 provided such a qualification requirement. The examination of pressure retaining components for evidence of leakage requires very little technical training. Personnel performing these examinations must have good visual acuity, an understanding of the procedure(s) used to perform the examination and the knowledge and experience in locating equipment within the plant using plant/system diagrams. To ensure that personnel possess the necessary qualifications, IWA-2316 requires VT-2 examination personnel have at least 40 hours of plant walkdown experience, at least 4 hours of instruction of Section XI requirements and plant specific VT-2 procedures, and yearly visual acuity exams. IWA-2316 eliminates, for VT-2 examiners, the requirements and related expenses associated with achieving and maintaining the high level of qualification required for VT-1 and VT-3 examination personnel.

This code change is very beneficial to the industry, because it allows experienced plant personnel such as plant operators, engineers, test and maintenance personnel, and others to be qualified to perform VT-2 leakage examinations. If IWA-2316 requirements are allowed to stand, unadulterated, the utilities will be encouraged to train and qualify many more station personnel to relevant VT-2 standards. This will result in greater industry awareness of the importance of leakage identification.

Because the additional burden of this proposed mandated training provides no benefit, it is recommended that 10 CFR 50.55a not contain this language with regard to VT-2 qualified personnel.

Substitution of Alternative Methods

The proposed limitation in 10 CFR 50.55a(b)(xix) would prohibit the use of the provision in IWA-2240 (1998 Edition, 1999 Addenda, and 2000 Addenda) and IWA-4250(c) (1997 Addenda, 1998 Edition, 1999 Addenda, and 2000 Addenda), which allows alternative examination methods, a combination of methods, or newly developed techniques to be substituted for the methods specified in the Construction Code, provided the Authorized Nuclear

Inspector (ANI) is satisfied that the results are demonstrated to be equivalent or superior to those in the Construction Code.

The intent of these changes was to allow use of an NDE method not specified in Section XI Tables IWB-2500, IWC-2500 or IWD-2500. These paragraphs in no way blur the Construction Code or Section XI examination coverage, volume, flaw acceptance, or qualification requirements related to the respective methods that are outside the scope of an ANI's or ANII's responsibility. IWA-2240 and IWA-4250(c) allow use of an alternative examination method only. They do not alter the examination coverage requirements, examination volume, acceptance criteria, or NDE personnel qualification requirements. The responsibility of the ANII is to verify the alternative method is equivalent to the method specified by Section XI. The coverage requirements, examination volume and acceptance criteria are not revised or changed. The personnel qualification requirements will be as specified for the alternative NDE method. The provision of IWA-2240 and IWA-4520(c) should be allowed as written in the 2000 Addenda.

Table IWB-2500-1 Examination Requirements

The proposed 10 CFR 50.55a(b)(2)(xxi)(A) limitation would reinstate the nozzle inner radius examination requirement that was initiated by Code Case N-619 and implemented into the body of the Code in 1998. The industry has over 20 years of experience performing inner radius examinations on Pressurizer and Steam Generator nozzles and has yet to find any indications. These examinations are time consuming and are performed in high radiation areas resulting in excessive dose for limited (if any) benefit. The need to continue to perform these examinations should be reconsidered.

Supplemental Annual Training Requirements for Ultrasonic Examiners

The proposed limitation in 10 CFR 50.55a(b)(2)(xxii) is apparently based on misreading Code Case N-583 and its incorporation into the Code (Appendix VII, paragraph VII-4240, 1999 Addenda and later). The Code Case requires eight hours of practice by examining or analyzing prerecorded data from material or welds containing flaws similar to those that may be encountered during inservice examinations. This does not mean that training for manual techniques is not provided for. In the case of manual examinations, the Code case could be paraphrased "...at least eight hours of practice by examining material or welds containing flaws similar to those that may be encountered during inservice examinations." Similarly, in the case of automatic examination techniques, the Code change could be paraphrased "...at least eight hours of practice by analyzing prerecorded data from material or welds containing flaws similar to those that may be encountered during inservice examination."

In light of this clarification, the NRC should reconsider the proposed limitation, with perhaps the replacement of the limitation with clarifying comments. These clarifying comments could state that "manual examination training will consist of examination of material or welds containing flaws similar to those that may be encountered during inservice examinations. Similarly, automatic examination training shall consist of analysis of prerecorded data from material or welds containing flaws similar to those that may be encountered during inservice examination." This reconsideration is requested because eight hours of practice on flawed specimens within 6 months of performing examinations, as currently required by 10 CFR 50.55a, (for a total of 16 hours a year) is more beneficial than 10 hours of classroom training.

Summary of Comments

Although some of the proposed changes to 10CFR50.55(a) are thoughtful and well taken, many of the proposed changes seem to disregard new Code Edition benefits that were developed with deep regard for personnel and nuclear safety. Regulatory personnel sit on all ASME Code committees and their concerns and comments are always welcome and freely discussed. Use of the 10 CFR 50.55a rewrite process to veto the ASME Code, without due cause, and thereby subjugating the collaborative process can only result in reduced incentives for utilities to participate in the ASME Code process. This effect is to the detriment of the people's will as expressed in Public Law 104-113, National Technology Transfer and Advancement Act of 1995 (NTTAA).

Furthermore, many of the proposed restrictions on the use of newer ASME Code editions promote stagnation. Examples of this are the veto of the "Owner defined" processes, mandating unnecessary testing requirements for VT-2 personnel and an insistence on unnecessary redundant testing requirements for Containment penetration piping that is Class 2 only to meet MC requirements, not for system function. ASME Code is a living, vital document that is continually being revised as opportunities, issues and problems emerge. The ability of the Code requirements to change is a testament to the dedication of the ASME Code committee members, including many NRC personnel, to remaining abreast of developments in the industry. These committee members meet in the ASME Code forum to reach consensus, thereby advancing our industry.

Finally, the selective choosing of various sections from various vintage ASME Code editions as substitutes for later edition sections creates a hybrid code that becomes nearly unusable and certainly very confusing. At the same time, the NRC is proposing to rescind the elimination of the 10-year update. These two actions are at odds with each other. It would seem better for the NRC to allow utilities to remain at the 1989 Edition indefinitely, especially in light of the fact, as evidenced by the proposed rulemaking, that code requirements of that era are more acceptable to the NRC.

Example 1, Benefits of "Owner defined" requirements

Section IWE-2310(a) provides plants options from the strict requirements of the 1992 ASME Code which requires use of ASME Section XI, Subsection IWA-2210 for visual inspections of the entire pressure boundary. IWA-2210 requires the visual inspection be made from a maximum direct examination distance of four (4) feet with minimum illumination requirements. However, final rule 10CFR50.55a(b)(2)(x)(B) only allows for the examination to be made by remote methods such as a camera or optical aids provided it can be demonstrated that the remote methods can give equal or better results as the direct examination method.

If the remote inspection method is employed it would require the use of some sort of optical aids such as video cameras, special binoculars or telescope in order to get resolution anywhere near what one could see from 4 feet. These systems are mostly untried with the results less than desirable. This method would demand a considerable amount of resources and require a significant amount of time to complete due to very small field of view of the optical aids.

If the 4 foot maximum examination distance method is employed, some sort of inspection device would have to be suspended from polar crane support beams or to other structural points or a considerable amount of scaffold would have to be erected to inspect the liner plate. This activity would add a significant amount of time and expense to any refueling outage. The polar crane would have to be taken out of service for safety reasons while the inspections are being performed. Consequently, it will take a considerable amount of time to complete the inspection by this method as well as increasing radiation exposure and increasing personnel safety risk.

Section IWE-2500 and Table IWE-2500-1 requires General Visual examinations of 100% of the accessible pressure boundary components each period. Callaway is a PWR with a dry containment and as such, the metallic liner is not subjected to areas of standing water, repeated wetting and drying or other environmental factors that would accelerate corrosion. Therefore, the inspection program has been developed using a general visual examination that will detect any significant deterioration without exposing personnel to dangerous high fall hazards or impacting the outage schedule. By using existing vantage points such as platforms, maintenance truss, and the polar crane coupled with employing special lights and standard optical aids, Callaway Plant is able to inspect 100% of the accessible surfaces of the liner plate each period. Callaway has defined visual examination resolution requirements to be used with the general visual examination that are meaningful and practical which will allow Inspectors to detect minor deterioration before it becomes significant. If the general visual inspection reveals "suspect" areas of the pressure boundary, a detailed visual examination such as a VT-1 or VT-3 depending on conditions will be performed to assure structural integrity of the pressure boundary.