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**FENOC**

*FirstEnergy Nuclear Operating Company*

DOCKET NUMBER
PROPOSED RULE PR 50
(66FR 40626)

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DOCKETED
USNRC

October 15, 2001 (11:36AM)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

October 9, 2001
PY-CEI/NRR-2596L

United States Nuclear Regulatory Commission
Attn: Rulemaking and Adjudications Staff
Washington, D.C. 20555-0001

Subject: Public Comments on the Proposed 10 CFR 50.55a Rulemaking,
Federal Register, August 3, 2001, Volume 66, Number 150 (66 FR 40626)

Ladies and Gentlemen:

A proposed amendment to 10 CFR 50.55a was noticed in the Federal Register dated August 3, 2001 [Volume 66, Number 150 (66 FR 40626)]. The Federal Register notice requested public comment by October 17, 2001. The Perry Nuclear Power Plant (PNPP) staff has reviewed the proposed amendment, and their comments are contained in Attachment 1. The PNPP staff is hoping that the NRC staff will give these comments due consideration for improving the proposed amendment.

If you have any questions, or require additional information, please contact Mr. Gregory A. Dunn, Manager - Regulatory Affairs, at (440) 280-5305.

Very truly yours,

John K Wood

Attachment

Template = SECY-067

SECY-02

## Comments on Proposed Amendment to 10 CFR 50.55a Published in the Federal Register August 3, 2001 (66 FR 40626)

1. Summary Number 2.2.1.1 – Paragraph (b)(2)(viii)(F). The proposed modification would require personnel examining containment concrete surfaces and tendon anchorage hardware, wires or strands be qualified in accordance with the procedures of IWA-2300 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda in lieu of "owner defined" personnel qualification provisions in IWL-2310(d) of the 1997 Addenda and later approved Editions and Addenda.

The Perry Nuclear Power Plant (PNPP) staff objects to this modification. The reason for the wording is that the Owner, through his agent (the Responsible Engineer - for Class CC, and the Responsible Individual - for Class MC), is the most-qualified entity for determining the applicable inservice-inspection requirements for the particular concrete-containment configuration. For the protection of the public, the responsibility for inspection, including development of plans and procedures for examination of concrete components and surfaces, should be vested in the Responsible Engineer as a function of his design responsibility and his professional certification. It is difficult to provide 'minimum-requirement' acceptance criteria for concrete containment surfaces, as the subjective nature of concrete inspection is not conducive to such all-encompassing criteria. Sound engineering judgement should be used in setting limiting values for acceptability, a factor that supports each Owner determining site-specific criteria applicable to the concrete containment components at his site. Acceptable crack sizes (widths), for example, depend mostly on the conditions of exposure and should be established in view of the possibility of corrosion of the reinforcement. As such, conditions of acceptability would be different at each site.

2. Summary Number 2.2.1.2 – Paragraph (b)(2)(ix)(F). The proposed modification would require that personnel who conduct visual examinations of containment surfaces be qualified in accordance with IWA-2300 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda in lieu of "Owner-defined" qualification provisions in IWE-2330(a) of the 1998 Edition and later approved Editions and Addenda.

The PNPP staff objects to this modification. Similar to the response for the proposed modifications stated in 50.55a(b)(2)(viii)(F), the primarily-subjective nature of metal containment surface examination (i.e., looking for damage or degradation, often by examination of a coated surface as an indicator of the condition of the base material underneath) also supports the use of Owner-defined acceptance criteria. Free-standing metal containment vessels and metal containment liners serve different purposes and are site-specific in their application, thus the development of generic acceptance criteria would have little meaning. Note, that this does not include the specific IWE-3511.3 acceptance criteria for containment surfaces requiring augmented examination, which define material (thickness) loss beyond which additional evaluation/correction activities may be required (refer to Summary Number 2.2.3 below).

3. Summary Number 2.2.1.3 – Paragraph (b)(2)(ix)(G). The proposed modification would require that the General and Detailed Visual Examinations required by IWE-2310(b) and IWE-2310(c) of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda meet the VT-3 and VT-1 examination provisions in IWE-2310(a) of the 1998 Edition, the 1999 Addenda, and the

2000 Addenda, in lieu of the "Owner-defined" General and Detailed Visual Examination provisions in IWE-2310(a) of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda.

The PNPP staff objects to this modification. The provisions of General and Detailed Visual Examinations are appropriately specified by the Owner (Responsible Individual), as noted in Summary Number 2.2.1.1 above. One possible enhancement that could be made to these requirements (taken from IWA-2210) would be the addition of a procedure demonstration to validate the examination conditions and the applicable acceptance criteria, as determined by the Owner (Responsible Individual).

4. Summary Number 2.2.1.4 – Paragraph (b)(2)(ix)(H). The proposed modification would require licensees to use the acceptance standard of IWC-3513 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda to evaluate flaws in pressure-retaining bolting that is greater than or equal to 2" in diameter identified during the examination of containment surfaces in lieu of the "Owner-defined" acceptance standard of IWE-3510.1 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda.

The PNPP staff objects to this modification. IWC-3513 seems to be an inappropriate reference for this application, as it identifies surface and volumetric examination methods for bolting examination - processes not required for containment vessel bolting. There is no substantive change between the previous wording in IWE-3515.1 (1992 Edition with 1992 Addenda - acknowledged as being acceptable to the NRC due to its current adoption in 10 CFR 50.55a) and the current wording in IWE-3510.3, other than elimination of the impractical bolt-torque or tension test.

5. Summary Number 2.2.2 – Paragraphs (b)(2)(ix)(I)(1) through (4). The proposed modification would require licensees to supplement the examination requirements for containment bolted connections in Table IWE-2500-1, Examination Category E-A, Items E1.10 and E1.11 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda with additional examination requirements.

The PNPP staff objects to this modification, but agrees with the recommendation that General Visual Examination should be performed on bolted connections that are disassembled at the time of a scheduled inspection.

As currently specified in Table IWE-2500-1, Examination Category E-A, Item E1.11 (which references the Acceptance Standards of IWE-3510.3), performance of the General Visual Examination is adequate to assess the condition of containment bolted connections. Connections with conditions that violate either the containment leak-tight or structural integrity (other than loose bolting, which should be tightened as part of a normal maintenance activity) shall be corrected by repair/replacement activities, as specified in IWE-3510.3. Detailed Visual Examination of a connection that has already been identified as requiring correction adds no value (i.e., the 'magnitude and extent' of the condition has already been identified).
As noted in Summary Number 2.2.1.4 above, there is no substantive change between the previous wording in IWE-3515.1 (1992 Edition with 1992 Addenda - acknowledged as being acceptable to the NRC due to its current adoption in 10 CFR 50.55a) and the current wording in IWE-3510.3, other than elimination of the impractical bolt-torque or tension test.

6. Summary Number 2.2.3 – Paragraph (b)(2)(ix)(J). The proposed modification would require that the ultrasonic examination acceptance standards specified in IWE-3511.3 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda for Class MC pressure-retaining components also apply to metallic liners of Class CC pressure-retaining components.

The PNPP staff objects to this modification. Ultrasonic examination of a concrete containment liner is an inappropriate requirement, as these components typically provide a leak-tight membrane but serve little or no stress-bearing function. The (reinforced) concrete portion of a concrete containment is the load-bearing component, not the metallic shell liner. Requiring ultrasonic examination of, and imposing ultrasonic acceptance standards on, such components as concrete containment liners adds no value and results in unnecessary personnel exposure and cost.

7. Summary Number 2.2.4 - Paragraph (b)(2)(xii)(B). The proposed limitation would not allow piping that penetrates containment that is connected to piping outside the scope of Section XI to be exempted from the pressure test provisions of Subsection IWA as permitted by IWA-5110(c) of the 1997 Addenda, the 1998 Edition, the 1999 Addenda, and the 2000 Addenda.

The PNPP staff objects to this limitation. The basis for the Code exemption was incorporation of Code Case N-522. The basis for N-522 was that the subject piping is typically piping that is classified as Class 2 piping only for the purposes of containment penetration and the piping on either side of the penetration boundary valves is non-safety. Thus, the piping's only safety-related function is that of containment integrity and only the rules of 10 CFR 50 Appendix J need be applicable. PNPP currently uses Code Case N-522 for the subject piping, initially as an approved relief request for the PNPP first 10-year inspection interval and now through its incorporation into Revision 12 of Regulatory Guide 1.147. Both the NRC SER for PNPP and the Regulatory Guide had a proviso that required the Appendix J test to detect and locate through wall leakage, this is not the case with the new addenda and edition of the Code. The new addenda and edition of the Code fully exempt the subject piping per IWA 5110 (c). The PNPP staff believes this full exemption is justified, however, if a limitation is to be imposed, the limitation should still allow the use of Appendix J testing in lieu of Section XI pressure testing with the provisions given in Regulatory Guide 1.147. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to address this limitation in their estimation and evaluation of the values and impacts.

8. Summary Number 2.2.5 - Paragraph (b)(2)(xviii)(A). The proposed modification would require Level I and II NDE personnel and personnel qualified under the Nondestructive Testing Control Certifications Program to be recertified on a 3-year interval in lieu of the 5-year interval specified in IWA-2314 of the 1997 Addenda and the 1998 Edition, and IWA-2314(a) and IWA-2314(b) of the 1999 Addenda and the 2000 Addenda.

The PNPP staff objects to this requirement. The basis for the 5-year recertification requirement was incorporation of Code Case N-574. The Code Case brought the recertification frequency for Level I and II personnel in line with that of Level III personnel. The NRC does not take exception to Level III personnel recertifying every 5 years, so why should Level I and II personnel be held to a tougher standard than Level III personnel? The proposed rule states that proficiency of examination personnel decreases over time. Other than for the ultrasonic method, there appears to be no data to support this requirement. With regard to the ultrasonic

method, the annual training requirements of VII-4240 were put in place to assure that proficiency is maintained. These requirements, which were not in place in the earlier editions and addenda of the Code that specified recertification every 3 years, were part of the justification for Code Case N-574 and its incorporation into the code. NDE workforce shortfalls are a significant challenge to the industry and extending the frequency of recertification for Level I and II personnel to be the same as for Level III personnel can only help. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to address this limitation in their estimation and evaluation of the impacts.

9. Summary Number 2.2.5 - Paragraph (b)(2)(xviii)(B). The proposed modification would supplement the alternative qualification provisions for VT-2 examination personnel in IWA-2316 of the 1998 Edition, the 1999 Addenda, and the 2000 Addenda. Specifically, the modification would require that the proficiency of training for VT-2 examination personnel be demonstrated by administering an initial qualification examination and administering recertification examinations on a 3-year interval.

The PNPP staff objects to this modification. The basis for the alternative requirements in IWA-2316 was incorporation of Code Case N-546. PNPP currently has a relief request to use the alternative VT-2 personnel qualification requirements of Code Case N-546. The NRC SER for the relief request does not stipulate that initial qualification examinations or recertification examinations be performed. To require them almost entirely defeats the purpose of the alternative requirements. The alternative requirements were put in place because without them VT-2 examination personnel would have to be qualified and certified in accordance with ANSI/ASNT CP-189, which would require initial certification and recertification exams. However, unlike traditional NDE methods, VT-2 is not addressed by ANSI/ASNT CP-189 and to qualify and certify VT-2 personnel in a manner commensurate with the requirements of CP-189 is unnecessary. The Abstract of CP-189 states, "This standard applies to personnel whose specific tasks or jobs require appropriate knowledge of the technical principles underlying nondestructive testing (NDT) methods for which they have responsibilities within the scope of their employment." Unlike the nondestructive testing methods addressed within CP-189, or even VT-1 and VT-3 examination methods, VT-2 examination does not require any special knowledge of technical principals underlying its performance. It is only the straight-forward examination for leakage. No special skills or technical training are required in order to observe water dripping from a component or bubbles forming on a joint wetted with leak detection solution. As such, VT-2 examinations should not be considered nondestructive examinations requiring the attending qualification and certification burdens. The Code Case and its incorporation into IWA-2316 allows those personnel most familiar with the walkdown of plant systems, such as licensed and non-licensed operators, local leak rate personnel, system engineers, and inspection and examination personnel to perform VT-2 examinations without formal qualification and certification. The experience, training, and vision test requirements within IWA-2316 ensure that the personnel performing VT-2 examinations are qualified while removing barriers that have previously prevented many experienced plant personnel from performing leakage examination walkdowns. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to address this limitation in their estimation and evaluation of the impacts.

10. Summary Number 2.2.7 - Paragraph (b)(2)(xx). The proposed limitation would require that the pressure and hold time requirements of IWA-5213(a) of the 1995 Edition be applied in lieu of the revised provisions of IWA-5213(a) in the 1997 Addenda, the 1998 Edition, the 1999 Addenda, and the 2000 Addenda when performing system leakage tests.

The PNPP staff objects to this limitation. The basis for the revision of IWA-5213(a) was the incorporation of Code Case N-498-2. PNPP currently uses Code Case N-498-1, which allows the substitution of system leakage tests (conducted at nominal operating pressure) in lieu of the elevated pressure tests (i.e., hydrostatic testing) at the end of each inspection interval. In Revision 1 of the Code Case, hold times of 10 minutes for non-insulated systems and 4 hours for insulated systems are specified for the system leakage test, whereas, in Revision 2 no hold times are specified. N-498-1 is endorsed in Regulatory Guide 1.147 without any provisions. Under the 1989 Edition of Section XI, PNPP's current Code of record, the routine pressure tests conducted during the inspection interval are system leakage tests for the Class 1 boundary, system functional tests for Class 2 or 3 systems that are not normally in operation, and system inservice tests for Class 2 or 3 systems that are normally in operation. The specified hold times for these tests are none for the system leakage tests, 10 minutes for the system functional tests, and basically 4 hours for the system inservice tests. Thus, under PNPP's current pressure testing program, which is all based on Code Editions or Code Cases endorsed by the NRC and except for the end-of-inspection-interval pressure tests, no hold times are required for Class 1 system pressure tests and only 10 minute hold times are required for Class 2 and 3 systems that are not normally in operation. Under the proposed limitation, hold times of 10 minutes for non-insulated systems and 4 hours for insulated systems would have to be used for these systems. In the case of the Class 1 systems, this would mean a 4-hour extension of the RPV Leak Test that is typically a critical path activity performed at the end of each refueling outage. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to include the substantial costs of this critical path time in their estimation and evaluation of the impacts. In the case of the Class 2 or 3 systems that are not normally in operation, this would require 4-hour extensions of their maintenance/test-run windows. The first case would add considerable cost to a refueling outage and the second case would increase system-out-of-service times and may be counterproductive to Maintenance Rule guidelines. With the possible exception of the recent leakage identified in PWR head penetrations and a PWR hot- leg nozzle, the previous Code requirements have proven themselves adequate for detecting safety-significant leakage. Even the events at the PWR's would not be helped by the proposed limitation as they were due more to inadequate access than to inadequate hold times. In summary, the proposed limitations will provide for a significant increase in burden with no proven commensurate increase in safety.

11. Summary Number 2.2.8 - Paragraph (b)(2)(xxi)(B). The proposed limitation would be that the CRD bolting examinations of Table IWB-2500-1, Examination Category B-G-2, Item B7.80 of the 1995 Addenda be retained when using the 1997 Addenda, the 1998 Edition, the 1999 Addenda and the 2000 Addenda.

The PNPP staff objects to this limitation. Item B7.80 required VT-1 examination of CRD housing bolting when disassembled and it was eliminated with the incorporation of Code Case N-547. The proposed limitation would have licensees go back to an Edition where Item B7.80 still existed. The basis for the proposed limitation states that the examination is appropriate prior to reinstallation because bending and galling of threads, and other damage to bolting, can

occur when performing maintenance activities that require removal and reinstallation of bolting. Code Case N-547 justified elimination of the CRD bolting exams as there was no history of CRD bolting failures and skill of the craft and maintenance practices would preclude re-installation of damaged bolting. Also, since CRD mechanisms are typically contaminated and in high radiation areas, elimination of the bolting exams would reduce radiation exposure. Furthermore, Item B7.80 never required examination of the bolting prior to installation. Note 1 of Table IWB-2500-1, Examination Category B-G-2, states that bolting may be examined in place under tension, when the connection is disassembled, or when the bolting is removed. As used under the Extent and Frequency of Examination Column for Item B7.80, "when removed" simply establishes the scope of the CRD bolting exams. In order to avoid contamination and radiation exposure, VT-1 examination personnel typically examine the bolting when it is removed and remotely located from the CRD mechanism. It is still the skill of the craft and good maintenance practices that ensure that the bolting is not damaged upon installation. Thus, not only is the proposed limitation considered unwarranted, it also fails to accomplish its stated purpose.

12. Summary Number 2.2.8 - Paragraph (b)(2)(xxi)(C). The proposed limitation would require that the provisions of Table IWB-2500-1, Examination Category B-K, Item B10.10 of the 1995 Addenda be applied in lieu of the 1997 Addenda, the 1998 Edition, the 1999 Addenda, and the 2000 Addenda.

The PNPP staff objects to this limitation. The 1997 Addenda and later Editions and Addenda incorporate Code Case N-323-1, which would allow single-side surface examination of class RPV support skirt attachment welds. Access to the outside surface of RPV skirt welds is typically not that difficult, but access to the inside surface involves entering a confined space under the RPV bottom head that is also a high radiation area. Additionally, the inside surface geometry is such that surface exam preparation is difficult. For these reasons and because the service history for RPV skirt welds is unblemished, Code Case N-323-1 was developed and incorporated into the Code. The proposed limitation would have the licensee go back to an Edition where either surface examination from both sides or a volumetric examination would be performed. It is noteworthy that ultrasonic calibration blocks were typically not supplied for RPV skirt welds and the ultrasonic performance demonstration requirements of Appendix VIII do not address RPV support attachment welds. Thus, there is no established demonstration program like Performance Demonstration Initiative (PDI) in place and a licensee that would want to perform volumetric examination in lieu of dual-sided surface examinations would have to fabricate their own calibration blocks and sample specimens, develop their own procedures, and set up their own demonstration program. The basis for the proposed limitation states that single-side surface examination is not sufficient because it would not identify flaws that would be identified by a single-sided volumetric examination or a surface examination from both sides of the weld. Surface examination from only the outside surface would not detect flaws that originate from the inside surface, but the types of material involved are very flaw tolerant, with slow flaw propagation, and flaws originating on the inside surface would grow through-wall long before their length would threaten the structural integrity/function of the weld. RPV skirt welds are similar to BWR core shroud circumferential welds in that they are not pressure retaining and their load keeps them in compression. Safety analyses performed by the Boiling Water Reactor Vessel Internals Process (BWRVIP) found that core shroud circumferential welds could be

cracked through-wall for 360° and still perform their function. Considering this comparison and the excellent service history of RPV skirt welds, the extra radiation exposure and burden necessary to examine the inside surface of the weld is not warranted. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to address this limitation in their estimation and evaluation of the impacts.

13. Summary Number 2.2.9 - Paragraph (b)(2)(xxii). The proposed limitation would not allow the use of the revised supplemental annual training requirements of UT examiners in Appendix VII, paragraph VII-4240 of the 1999 Addenda and the 2000 Addenda. Instead, Licensees would be required to use the requirements of VII-4240 of the 1998 Edition.

The PNPP staff objects to this limitation. The proposed limitation would have the licensee use requirements that the NRC determined were inadequate in the previous revision of 10 CFR 50.55a (reference September 22, 1999, 64 FR 51370, paragraph 2.4.1.1.1), with the primary reason being that the VII-4240 requirements at that time did not include any examination of flawed specimens. Because the NRC determined these requirements to be inadequate, paragraph (b)(2)(xiv), which is not being modified or deleted by the current rule change proposal, was added to 10 CFR 50.55a. It requires that personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training with specimens that contain cracks and that the training must be completed no earlier that 6 months prior to performing ultrasonic examinations at a licensee's facility. Many licensees, including PNPP, have requested and been granted relief from the VII-4240 requirements on the basis of substituting the (b)(2)(xiv) requirements. In fact, Code Case N-583 and the subsequent revision of VII-4240 that the NRC is now objecting to, were written in response to the NRC's previous concerns and, with the exception of frequency, to bring VII-4240 in line with (b)(2)(xiv). The basis for the currently proposed limitation states that N-583 (and thus the revised VII-4240) only provides training for techniques associated with data recording capabilities and does not provide for training using manual techniques. First of all, nowhere does N-583 or the revised VII-4240 address training for data recording. Secondly, N-583 and the revised VII-4240 do not preclude training using manual techniques. The real need, as previously expressed by the NRC and agreed upon by the Code Committee, is for ultrasonic examination personnel to get training/practice on examination of flawed specimens. It is not the ability to push a transducer that erodes with time, but rather it is the skill to be able to recognize and analyze flaw signals. The revised VII-4240 simply provides the option of practicing with flaw signals through live examination of flawed specimens or through analyzing prerecorded data from flawed specimens. Considering the above discussion, it is PNPP's position that the existing (b)(2)(xiv) should be deleted and there should be no limitations on the use of the revised VII-4240. In the NRC's regulatory analysis for the proposed amendment, the NRC failed to address this limitation in their estimation and evaluation of the impacts.