

# PRIORITY 1

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SUBJECT: Submits third ten yr interval ISI plan, Unit 1 suppl info.

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**DUKE POWER**

January 24, 1995

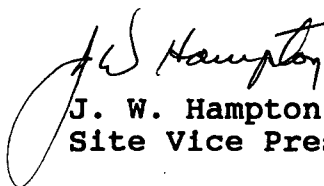
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Subject: Duke Power Company  
Oconee Nuclear Station  
Docket No. 50-269  
Third Ten Year Interval ISI Plan, Unit 1  
Supplemental Information

By letter dated November 8, 1994, the NRC requested additional information concerning Oconee Nuclear Station's Third Interval ISI Plan for Unit 1. Please find attached our response to the NRC's request for additional information.

If you have questions or need further information you may contact D. A. Nix at (803) 885-3634.

Very truly yours,

  
J. W. Hampton  
Site Vice President

Attachment

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U. S. Nuclear Regulatory Commission  
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**Item A**

*Provide isometric and or component drawings showing the Code Class 1 and 2 piping welds, components, and supports that Section XI of the ASME Code requires be examined during the third 10 year inspection interval. The requested drawings, along with the "listing and Schedule of Examinations", provided in the December 20, 1993, submittal will permit the staff to determine if the extent of ISI examinations meets the applicable Code requirements.*

**Response**

We will provide you with copies of the associated welding isometric drawings and the component drawings showing the Class 1 and 2 piping welds and components that have welds on them (i.e., valve body welds). It will create an extreme hardship on Duke to provide you with copies of all of the support drawings as there are so many.

Due to limited personnel and budget we are unable to furnish you with copies of the requested drawings right now. We will strive to put together a package by April 28, 1995.

**Item B**

*Paragraph 10 CFR 50.55a(b)(2)(iv) requires that appropriate ASME Code Class 2 piping welds in the Residual Heat Removal (RHR), Emergency Core Cooling (ECC), and Containment Heat Removal (CHR) systems be examined. These systems are critical to the safe shutdown of the plant and should not be completely excluded from inservice volumetric examination based on wall thickness. It was noted that the ISI Plan for the third 10 year interval contains surface examinations of 7.5% of Class 2 longitudinal welds and 5% of Class 2 circumferential welds. Additionally, it appears that portions of RHR, ECC, and CHR systems have been excluded from volumetric examination based on wall thickness. Considering the safety significance of the RHR, ECC, and CHR systems, describe your plans for performing volumetric examination on a sample of thin-wall piping welds to assure the continued integrity of these systems.*

**Response**

Duke has no plans of performing volumetric examinations on thin wall piping since it is not a code requirement to do so. We will perform a surface examination on this thin wall piping just as we did last interval.

**Item C**

*For Code Class 1 integral attachment welds to piping, pumps, and valves, the code does not require examinations for the third and fourth interval when implementing Inspection Program B. Examination of integral attachments in Code Class 2 and 3 systems is required in third and fourth interval. ASME Code Case N-509 (approved November 25, 1992 by ASME) provides for continued examination of Class 1 integral attachments for the life of the plant as well as readjustments in the sample inspection requirements for Code Class 1 integral attachment welds during the third inspection interval or implementation of the Code Case.*

**Response**

Duke does not plan on invoking Code Case N-509. Duke will perform the ASME Section XI Code required examinations on the ASME Code Class 2 and 3 integral attachments.

**Item D**

*Address the degree of compliance with augmented examinations that have been established by the NRC when added assurance of structural reliability is deemed necessary. Examples of documents that address augmented examinations based on licensee commitments are listed below:*

- (1) ***Branch Technical Position MEB 3-1, High Energy Fluid Systems, Protection Against Postulated Piping Failures in Fluid Systems Outside Containment.***
- (2) ***Regarding Regulatory Guide (RG) 1.150, Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations;***
- (3) ***Regarding Regulatory Guide 1.14, Reactor Coolant Pump Flywheel Integrity.***

**Response**

- (1) The Oconee Nuclear Station construction permit was issued prior to July 1, 1973. Therefore, Duke was not required to comply with MEB 3-1.

There are no augmented inspections required due to the analysis for postulated pipe breaks.

- (2) Duke Power complies with much of RG 1.150, Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations. Duke Power's exceptions to that RG are discussed below:

Revision 1 of R.G. 1.150 applies with the exceptions noted below. Sections numbers shown below refer to sections of R.G. 1.150.

C.2.1: Section is not applicable. Mechanized scanning will be used

C.2.2: R.G. 1.150 is satisfactory as written, with the exception, for calibration at scanning speed. Calibration and sizing will be accomplished in a static position. Mechanized scanning will be performed for flaw detection. Verification that the scanning sensitivity is adequate will be performed by demonstrating that the amplitude from the calibration reflectors meet DAC curve with the instrument set at scanning sensitivity and while moving the transducers across the reflectors at scanning speed.

C.2.3: Not applicable

C.5: The R.G. will be met for the first 2 inches depth from the scanning surface (inner surface for vessel, outer surface for vessel head)

C.6.1: R.G. 1.150 is satisfactory as written, except Duke will record data at 20% of DAC only if the maximum amplitude of the indication exceeds 50% of DAC.

C.6.2: Same as C.6.1

C.6.2a: Duke records indications at scan intervals of 0.9x transducer width, plus minimum and maximum through wall and end points.

C.6.2b: R.G. 1.150 is satisfactory as written except Duke will record indications at 20%, 50%, and 100% DAC.

C.7a: R.G. 1.150 recommends that the best estimate of error band involved in sizing of flaws be included in the report. Duke takes exception to this recommendation on the basis that unless actual flaw dimensions are known, error band cannot be reliably calculated. No estimates of error band will be made.

Justification:

The R.G. requirements of Sections C.2.1, C.2.2, and C.2.3 do not apply to the type of inspection Duke will do (automated scanning with defects sized and recorded with the transducers in a static position). Section C.5

of the R.G. requires scanning with a transducer  $\pm 15^\circ$  from perpendicular to the weld base metal interface. The most critical area for this scan is near the surface of the weld. Due to the long sound path required to scan the full thickness (up to 12 inches), it is impractical to inspect beyond the two inch near-surface area. Section C.6.2 of the R.G. requires recording of indications of 20% of DAC. This would produce a large volume of data on minor reflectors and an unacceptably large increase in inspection time. By recording 20% DAC information only if the peak amplitude exceeds 50% DAC, the volume of data and inspection time will be reduced, while the most useful data will still be recorded.

- (3) As outlined in section 7 of Oconee's Unit 1 ISI Plan the reactor coolant pump flywheels are scheduled for augmented examination.

#### **Item E**

*The Code of Federal Regulations, Part 10 50.55a(g)(6)(ii)(A), requires that all licensees must augment their reactor vessel examinations by implementing once, during the inservice inspection interval in effect on September 8, 1992, the examination requirements for reactor vessel shell welds specified in Item B1.10 of Examination Category B-A of the 1989 Code. In addition, all previously granted relief for Item B1.10, Examination Category B-A, for the interval in effect on September 8, 1992, is revoked by the new regulation. For licensees with fewer with 40 months remaining in the interval on the effective date, deferral of the augmented examination is permissible with the conditions stated in the regulations.*

*Provide the staff with the projected schedule for this augmented examination and a technical discussion describing how the regulation will be implemented at Oconee Nuclear Station, Unit 1 during the third interval. Include in the discussion a description of the intended approach and any specialized techniques or equipment that will be used to complete the required augmented examinations, and an estimate of the coverage that can and will be obtained.*

#### **Response**

Oconee Unit 1 reactor vessel examination was performed during the third period of the second inservice inspection interval (August 1991). This examination was performed by B&W using ARIS II automated equipment. 100% of the examination volume of all Category B1.10 welds were examined as documented in B&W's reactor vessel examination report.

Examination of the Oconee Unit 1 reactor vessel welds (including Category B1.10 welds) will be performed during the third period of the third inservice inspection interval as outlined in Oconee's Unit 1 ISI Plan. This will be the third time that 100% of the Category B1.10 welds will have been examined in

accordance with 10 CFR50.55a (g)(6)(ii)(A)(4). The requirements of 10 CFR50.55a (g)(6)(ii)(A)(4) have been met for Oconee Unit 1.

**Item F**

***Request for Relief No. ONS-004:*** Relief is requested from disassembling control rod drive mechanism (CRDM) bolting to meet the additional examination requirements of IWB-2430(a). IWB-2430(a) applies to the examinations performed in accordance with Table IWB-2500-1, and requires additional examinations of the remaining welds, areas, or parts scheduled for this and the subsequent period. It appears that Duke Power Company is applying the additional examination requirements of IWB-2430(a) to the corrective measures of IWA-5250. Please state the applicable Examination Category and Item Number, and provide an explanation of the rationale for using the additional examinations of IWB-2430(a).

**Response**

As stated in our Request for Relief, the Item Number involved is B07.080.001. This Item Number is applicable to Examination Category B-G-2.

This request for relief does not advocate that Duke disassemble anything. For historical purposes we merely state that due to NRC Generic Letter 88-05 and IE Bulletin 82-02 we disassembled these connections.

Under paragraph IWB-2430 (a) it states "Examinations performed in accordance with Table IWB-2500-1 that reveal indications exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations at this outage. The additional examinations shall include the remaining welds, areas, or parts included in the inspection item listing and scheduled for this and subsequent period. If the examinations for that inspection item are not scheduled in the subsequent period, the most immediate period containing scheduled examinations shall be taken as the subsequent period." When you examine Table IWB-3410-1 you find that Examination Category B-G-2 is referenced. This means that if the acceptance criteria of IWB-3517 is not met, then the sample size must be extended to meet the requirements of paragraph IWB-2430(a). Request for Relief ONS-004 only seeks relief from the additional or extended sample requirement of Paragraph IWB-2430(a).

Your reference to paragraph IWA-5250 is only applicable during a system pressure test and does not come into play during this particular inspection. Paragraph IWB 3517.1(h) it specifically addresses leakage and instructs the Owner to follow paragraphs IWB-3122 or IWB-3142 for corrective action. Whereas IWA-5250 states "The source of leakages **detected during the conduct of a system pressure test** shall be located and evaluated by the



Owner for corrective measures as ...". We never intended to invoke paragraph IWA-5250 for this application.

Once again we are only seeking relief from the requirement to expand the sample size.

#### **Item G**

***Request for Relief No. ONS-005:*** Relief is requested from performing the Code-required VT-1 visual examination of the CRDM motor tube-to-nozzle pressure-retaining bolting that has been removed due to "boron deposit degradation". It is not clear why the VT-1 visual examination of the removed bolting cannot be performed. Is it because of deposits or degradation? If degradation is occurring, provide a more detailed description of the degradation mechanism. The replacement of bolting instead of inspection is a conservative approach if the replaced bolt is considered a failed component and Code requirements related to the failed component are being followed. Are additional examinations being performed? Provide a technical discussion for the above questions and describe how the structural integrity of other CRDM bolting will be assured without performance of the visual examination.

#### **Response**

This Request for Relief was written to obtain relief from the requirement to perform a VT-1 examination on CRDM flange bolting that has any evidence of boron on it. The VT-1 examination can be performed; however, Duke does not see that it is necessary to have a certified VT-1 inspector look at the flange bolting material and reject the bolting when Duke intends on replacing the bolting material with new bolting material that has received a preservice examination by a certified VT-1 inspector.

The examinations that are performed are performed by maintenance personnel during each outage. All of the bolting is examined for evidence of boron during each refueling outage. Inspection of bolting material during CRDM maintenance not associated with flange leakage will be performed in accordance with Table IWB-2500-1 Item Number B7.80 by a certified VT-1 inspector.

#### **Item H**

***Request for Relief No. ONS-007:*** Relief is requested from performing the volumetric examination of the pump casing welds and the visual examination of the pump casing internal surfaces. Duke Power Company has proposed to perform the Code required examinations when a pump has been disassembled for maintenance. Table IWB-2500-1, Item B12.20 requires a VT-3 visual examination only when the pump is disassembled for maintenance or other

*reasons. Clarify the visual examination portion of this relief request. Regarding the volumetric examination requirement of Item B12.10, the staff has determined that Code Case N-481 is an acceptable alternative to the Code requirements. Provide a detailed technical discussion justifying why the Code or the Code Case requirements cannot be met.*

Response

Duke has no plans of invoking Code Case N-481.

We will re-submit this Request for Relief. The revised version will only address the required volumetric examination of the reactor coolant pump casing weld. In this revision, we will state that due to radiation exposure concerns as well as the number of man hours required to disassemble and reassemble the reactor coolant pump, it is not necessary to dismantle the reactor coolant pump just to perform the volumetric examination. In addition, past performance of volumetric examination results have not demonstrated that service induced flaws have been identified or present.

Item I

*Please verify that there are no additional relief requests, other than those submitted in the December 20, 1993, document. If additional relief requests are required, the licensee should submit them for staff review.*

Response

At this time, Duke has submitted all of the Request for Relief applicable for Oconee Unit 1 for the third inservice inspection interval.