



Duke Energy

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W. R. McCollum, Jr.
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September 12, 2001

U.S. Nuclear Regulatory Commission
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Subject: Duke Energy Company
Oconee Nuclear Station, Units 1, 2 and 3
Docket Nos. 50-269, -270, -287
Third Ten Year Inservice Inspection Interval
Request for Alternative No. 2001-013

Pursuant to 10 CFR 50.55a(a)(3)(i), attached is a Request for Alternative from requirements specified by the ASME Boiler and Pressure Vessel Code, Section XI.

Specifically, the attached Request for Alternative addresses use of ultrasonic examination in lieu of hydrostatic pressure tests or radiographic examinations for welds on certain Main Steam system valves. These valves are currently scheduled for replacement during the upcoming refueling outages: Unit 3 EOC19, scheduled to begin 11/10/01, Unit 1 EOC20 scheduled for 4/26/02, and Unit 2 EOC19, scheduled for 10/14/02.

Duke Energy requests approval of this alternative prior to 10/15/01 in order to avoid impact to the Unit 3 EOC19 outage activities.

If there are any questions, please contact R. P. Todd at (864) 885-3418.

Very truly yours,

W. R. McCollum, Jr.
Site Vice President

Attachment

A047

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DUKE ENERGY CORPORATION
Oconee Nuclear Station, Unit 1,2, and 3

Request for Alternative to the Requirements of the ASME Boiler and Pressure Vessel Code, Section XI

Component Description

During the Unit 3 refueling outage 3EOC-19, ten Main Steam Isolation valves are scheduled to be replaced. The equivalent valves on Units 1 and 2 are also scheduled for replacement during upcoming outages 1EOC20 and 2EOC19. Therefore this request also applies to those similar Main Steam valve replacements on Units 1 and 2. Each valve is an isolation between ASME Section XI Code piping and non-safety related piping. The carbon steel butt welds on the ISI Class 2 (safety related) side of the valves are the subjects of this request. The welds cannot be isolated from the steam generators. The existing welds on the components being replaced were originally fabricated and installed per USAS B31.1.0, 1967 Edition. In addition, they are classified as ASME Section XI, Class 2 welds as previously stated.

VAVLE TAG NUMBER	SIZE	SCHEDULE OF END PREP	MATERIAL
1,2,3MS-0017	12"	.562 (schedule 60)	CS
1,2,3MS-0024	6"	.432 (schedule 80)	CS
1,2,3MS-0026	12"	.562 (schedule 60)	CS
1,2,3MS-0033	6"	.432 (schedule 80)	CS
1,2,3MS-0035	8"	.500 (schedule 80)	CS
1,2,3MS-0036	8"	.500 (schedule 80)	CS
1,2,3MS-0076	12"	.562 (schedule 60)	CS
1,2,3MS-0079	12"	.500 (schedule 80)	CS
1,2,3MS-0082	6"	.432 (schedule 80)	CS
1,2,3MS-0084	6"	.432 (schedule 80)	CS

Description of Code Requirements for Which an Alternative is Requested

Duke Energy Corporation (DEC) requests approval of an Alternative to the radiographic examination required by Code Case N-416-1, which invokes ASME Section III, NC-5222.

Subsection IWC-1000, and table IWC-2500-1, Examination Category C-F-2, item C5.51 of the 1989 Edition, No Addenda, of ASME Section XI, requires selected welds to receive a surface examination of the final weld (magnetic particle or dye penetrant) and a volumetric examination (radiographic or ultrasonic).

Subsection IWA-4700 of the 1989 Edition, No Addenda, of ASME Section XI requires that "after repairs by welding on the pressure containing boundary, a system hydrostatic test shall be performed in accordance with IWA-5000, System Pressure Test.

Code Case N-416-1 states that, in lieu of performing a hydrostatic pressure test as required by IWA-4000 for welded repairs or replacements, a system leakage test may be used provided the following requirements are met:

- a) NDE shall be performed in accordance with the methods and acceptance criteria of the applicable Subsection of the 1992 Edition of Section III.
- b) Prior to or immediately upon return to service, a visual examination (VT-2) shall be performed in conjunction with a system leakage test, using the 1992 Edition of Section

- XI, in accordance with paragraph IWA-5000, at nominal operating pressure and temperature.
- c) Use of this case will be documented on a NIS-2 Form.

In order to meet the Requirement (a), a radiographic examination must be performed as specified in paragraph NC-5222 of the 1992 Edition of ASME Section III of the subject butt welds. This is the requirement for which an alternative is requested.

Basis for Relief

Per 10CFR 50.55 a (a) (3) (i), DEC proposes to substitute recognized alternate NDE for the required radiographic examination. The alternate NDE consists of a surface NDE of the root pass of each subject weld, a surface examination of the final weld, and an ultrasonic examination of the final weld.

The 1989 Edition of ASME Section XI, No Addenda, Subsection IWA-2230 defines Volumetric Examinations as "A volumetric examination indicates the presence of discontinuities throughout the volume of material and may be conducted from either the inside or outside the surface of a component." Radiographic examinations (IWA-2231) and ultrasonic examinations (IWA-2232) are recognized as acceptable volumetric examinations. Paragraph NC-5279 of the 1992 Edition of ASME Section III allows the substitution of an ultrasonic examination plus a dye penetrant or magnetic particle examination for a radiographic examination of special welds. While the Main Steam Isolation welds are not considered special welds, the code (NC-5279) clearly recognizes the ultrasonic examination plus the dye penetrant or magnetic particle examinations as a substitute for a radiographic examination.

The Nuclear Regulatory Commission granted a similar request for relief for Davis-Besse Nuclear Station, Docket Number 50-346, in a Safety Evaluation dated August 13, 1999. The Safety Evaluation for Davis-Besse Request for Relief RR-B9 cites Code Case N-416-1 to grant exemption from hydrostatic pressure tests and also grants the Licensee exemption from the radiographic examination specified in Code Case N-416-1. Request for Relief RR-B9 required ultrasonic examination and magnetic particle examination in lieu of radiographic examination.

DEC has concluded that the proposed alternative provides an acceptable level of quality and safety and therefore would meet requirements for NRC approval. DEC has also concluded that performance of either a hydrostatic test as required by ASME Section XI or radiographic examinations as required by NC-5222 would have increased potential to conflict with other scheduled work and/or impact the outage critical path. Therefore, DEC believes the proposed alternative is the most desirable option for the examination of the subject welds.

Description of Proposed Alternative

Duke Energy requests a dye penetrant examination on the root of the weld with the final weld to receive a surface magnetic examination and ultrasonic examination in lieu of a radiographic examination as required by Code Case N-416-1. The ultrasonic examination will be performed in accordance with the requirements of ASME Section V, Article 5, with acceptance standards of ASME Section III, NC-5330. The proposed alternative provides a reasonable assurance that no unallowable flaws will exist in the welds and meets the criteria for alternatives which provide an acceptable level of quality and safety per 10 CFR 50.55a (a)(3)(i).

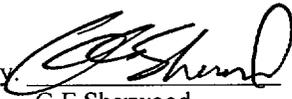
In addition, the internal quality of the root of the welds will be visually monitored at the completion of the initial root pass and monitored through completion of the weld. As required by IWC-2500 of the 1989 Edition, No Addenda, of ASME Section XI, all of the welds will receive an initial functional pressure test, (VT-2) prior to operation and on a periodic basis.

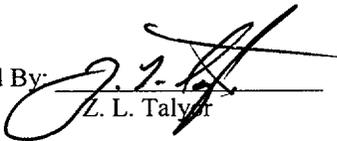
This is the last refueling outage within the current ten year interval. These welds will be subject to inclusion in the ISI program for the upcoming interval.

Duration/ Implementation of the Proposed Alternatives

The proposed alternative is applicable to the Unit 3 Main Steam Isolation Valve butt welds scheduled to be replaced during Unit 3, EOC19, which is scheduled to begin 11/10/01. The proposed alternative examinations will be performed prior to unit start-up activities scheduled for 11/28/01. As stated earlier, this request will also apply to similar Main Steam Isolation valve replacements for Unit 1, EOC20, scheduled for 4/26/02 and Unit 2 EOC19, scheduled for 10/14/02.

Duke Energy requests approval of this alternative prior to 10/15/01 in order to avoid impact to the Unit 3 EOC19 outage activities.

Originated By: 
G E Sherwood
9/11/01
Date

Reviewed By: 
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9/11/01
Date