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Detroit Edison



A DTE Energy Company

June 11, 2001
NRC-01-0047

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D C 20555-0001

Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Submittal of Inservice Inspection (ISI) Nondestructive
Examination (NDE) Relief Request, RR-A31, Regarding
Inner Radius Examination of Class 1 Reactor Vessel Nozzles

Pursuant to 10CFR50.55a(a)(3), Detroit Edison requests the approval of an alternate reactor vessel nozzle inner radius examination for the Fermi 2 Power Plant. Approval of this alternative examination is requested in accordance with the provisions of 10CFR50.55a(a)(3)(i) for the remainder of the second ISI-NDE 10-year interval which began on February 17, 2000.

The justification for this request is provided in the enclosed Relief Request (RR-A31) and is further supported by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Case N-648, "Alternative Requirements for Inner Radius Examination of Class 1 Reactor Vessel Nozzles, Section XI, Division 1," approved December 8, 2000. A copy of this Code Case is enclosed. Detroit Edison recognizes the typographical error in reference to Table IWB-3513-3 mentioned in the last paragraph of Code Case N-648. The ASME Section XI Subcommittee has been notified of this error and has acknowledged that Table IWB-3512-1 is the proper reference.

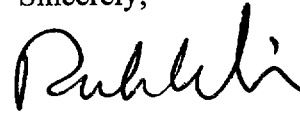
In order to plan for the upcoming eighth refueling outage, RFO8, scheduled to start on October 26, 2001, NRC approval of Relief Request RR-A31 is requested by September 7, 2001.

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Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.

Sincerely,


for wro

Enclosures

cc: T. J. Kim
M. A. Ring
NRC Resident Office
Regional Administrator, Region III
Supervisor, Electric Operators,
Michigan Public Service Commission

RELIEF REQUEST
RR-A31

COMPONENT FUNCTION/DESCRIPTION

Reactor Pressure Vessel Nozzle Inner Radius Section

SYSTEM

All systems included in the ISI NDE Program other than Feedwater

ASME CODE CLASS

Class 1

ASME SECTION XI REQUIREMENTS

ASME Section XI, 1989 Edition, Table IWB-2500-1 for Examination Category B-D, requires a volumetric examination of the inner radius section of all RPV nozzles welded with full penetration welds as shown in Figures IWB-2500-7(a) through (d).

BASIS FOR RELIEF

Pursuant to 10CFR50.55a(a)(3)(i) Detroit Edison is requesting relief from ASME Section XI requirements to perform the volumetric examination as discussed above. Detroit Edison is proposing to implement the alternative of ASME Section XI Code Case N-648 (attached).

All nozzle forgings were nondestructively examined during fabrication and have previously been examined using inservice ultrasonic techniques specific to the nozzle configuration. No indication of fabrication defects or service related cracking was detected by these examinations.

Nozzle inner radius examinations are the only non-welded areas requiring examination on the RPV. This requirement was deterministically made early in the development of ASME Section XI. Service related cracking has not been discovered in any BWR plant. For all nozzles other than Feedwater, there is no significant thermal cycling during operation. From a risk perspective there is no need to perform volumetric examination on any nozzles other than Feedwater and operational Control Rod Drive (CRD) return lines. The CRD return lines at Fermi 2 have been capped. The six Feedwater nozzle inner radius sections will continue to be examined with ultrasonic techniques developed and qualified in accordance with GE-NE-523-A71-0594-A, Revision 1 (the NRC has approved this report under TAC No. MA6787). The Feedwater nozzles represent 20% of all nozzles currently requiring volumetric inner radius examination. Detroit

Edison agrees with the Code Committee that use of the proposed visual examination alternative for nozzle inner radius exams other than for Feedwater will provide an acceptable level of quality and safety.

ALTERNATIVE EXAMINATION

Code Case N-648 provides an alternative requirement that allows a VT-1 examination of the surface M-N shown in Figures IWB-2500-7(a) through (d) in the 1998 Edition to be performed in lieu of the volumetric examination required by Table IWB-2500-1, Examination Category B-D, Item No. B3.100 (inspection program B), for inservice examination of reactor vessel nozzles other than BWR Feedwater or operational Control Rod Drive return nozzles.

Detroit Edison proposes to perform a visual examination of the accessible surfaces M-N of the inner radius section of all nozzles other than Feedwater, within the limits of standard BWR design. The exam sensitivity for remote in-vessel exams will be established using the same 1-mil wire standard used for other RPV internal examinations intended to detect cracking. Any direct exams, such as of the RPV head vent and spare nozzles, will be performed in accordance ASME Section XI VT-1 requirements.

Crack-like surface flaws exceeding the acceptance criteria of Table IWB-3512-1* in the 1998 Edition are unacceptable for continued service unless the reactor vessel meets the requirements of IWB 3142.2, IWB 3142.3 or IWB-3142.4.

APPLICABLE TIME PERIOD

Relief is requested for the remainder of the Second 10-year interval.

**Code Case N-648 contains a typographical error. Paragraph IWB-3513-3 is incorrectly referenced for nozzle acceptance criteria. The correct reference is IWB-3512-1.*

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: December 8, 2000

*See Numeric Index for expiration
and any reaffirmation dates.*

Case N-648

**Alternative Requirements for Inner Radius
Examinations of Class 1 Reactor Vessel Nozzles
Section XI, Division 1**

Inquiry: What alternative to the inservice examination requirements of Table IWB-2500-1, Examination Category B-D may be used for reactor vessels?

Reply: It is the opinion of the Committee that a VT-1 examination of the surface M-N shown in Figs.

IWB-2500-7(a) through (d) in the 1998 Edition may be performed in lieu of the volumetric examination required by Table IWB-2500-1, Examination Category B-D, Item No. B3.20 or Item No. B3.100, for inservice examination of reactor vessel nozzles other than BWR feedwater nozzles and operational control rod drive return line nozzles.

Crack-like surface flaws exceeding the acceptance criteria of Table IWB-3513-3 in the 1998 Edition are unacceptable for continued service unless the reactor vessel meets the requirements of IWB-3142.2, IWB-3142.3, or IWB-3142.4.