

# CATEGORY 1

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 AUTH. NAME    AUTHOR AFFILIATION  
 MECREDY, R.C.    Rochester Gas & Electric Corp.  
 RECIP. NAME    RECIPIENT AFFILIATION  
 VISSING, G.

SUBJECT: Requests approval to use alternative rule ASME Section IX  
 Code Case N-514 in lieu of 10CFR50.60 for calculating LTOP  
 setpoints, per 961202 & 10 ltrs.

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ROBERT C. MECREDY  
Vice President  
Nuclear Operations

December 18, 1996

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Attn: Guy Vissing  
Project Directorate I-1  
Washington, D.C. 20555

Subject: Request to Use ASME Code Case N-514 in the Determination  
of Low Temperature Overpressure Protection (LTOP)  
Enable Setpoint  
R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

Ref.(a): Letter from R. C. Mecredy, RG&E, to G. S. Vissing, NRC,  
Subject: "Reactor Coolant System (RCS) Pressure and  
Temperature Limits Report (PTLR)," dated December 2,  
1996.

(b): Letter from G. S. Vissing, NRC, to R. C. Mecredy, RG&E,  
Subject: "R.E. Ginna - Acceptance of Request to Extend  
Time for Approval of Revision of Pressure and Temperature  
Limits Report (PTLR) (TAC No. M97313)," dated December  
10, 1996.

Dear Mr. Vissing:

By Reference (a), RG&E requested an extension to the NRC's  
acceptance of the current Ginna Station Reactor Coolant System  
(RCS) Pressure and Temperature Report (PTLR) from December 31, 1996  
to July 1, 1997, for reasons as stated in the letter. The NRC  
approved this request in Reference (b) provided that RG&E submit  
the following by December 31, 1996:

- a. Request to allow use of ASME Code Case N-514; and
- b. Revised PTLR incorporating all NRC comments received to date.

Therefore, the purpose of this letter is to request approval in  
accordance with 10CFR50.55a(a)(3) to use the alternative rule of  
ASME Section XI Code Case N-514 in lieu of 10CFR50.60 for  
calculating LTOP setpoints. Specifically, the application of the  
10CFR50.60, "Acceptance Criteria for Fracture Prevention for  
Lightwater Nuclear Power Reactors for Normal Operation," would  
result in an LTOP enable temperature (and the requirement for the  
Safety Injection system to be isolated from the RCS) to be applied  
at a point where the Safety Injection System would still be  
required operable by the Ginna Station Improved Technical  
Specifications. Use of ASME Code Case N-514 provides a Code

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acceptable alternative which would resolve this concern.

It is requested that this request be approved by 3/30/97 in order to allow incorporation of revised heatup and cooldown curves into the Ginna Station PTLR, as required by our Improved Technical Specifications. These changes are required in addition to the revised PTLR to be submitted under separate cover by December 31, 1996 per Reference (b).

If you have any questions in this regard, please contact George Wrobel at (716) 724-8070.

Very truly yours,

  
Robert C. Mecredy

Attachment  
REJ\446

xc: Mr. Guy Vissing (Mail Stop 14C7)  
Project Directorate I-1  
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Ginna Senior Resident Inspector

## Attachment 1

Rochester Gas and Electric (RG&E) requests approval in accordance with 50.55a(a)(3)(i) to apply the American Society of Mechanical Engineers (ASME) Section XI, Code Case N-514, "Low Temperature Overpressure Protection Section XI, Division 1," in the determination of Low Temperature Overpressure Protection (LTOP) setpoints for the Ginna Nuclear Power Plant (Ginna).

Code Case N-514 was approved by ASME on February 12, 1992 and the guidance in Code Case N-514 has been incorporated into the 1993 Addenda to the ASME Boiler and Pressure Vessel Code, Section XI, Appendix G. Code Case N-514 provides guidance on when LTOP shall be in operation, and the maximum pressure to which LTOP shall limit Reactor Vessel pressure. In particular, Code Case N-514 states: "LTOP systems shall be effective at coolant temperatures... corresponding to a reactor vessel metal temperature of  $RT_{NDT} + 50^{\circ}F$ ... to satisfy Appendix G paragraph G-2215 of Section XI, Division 1." A copy of Code Case N-514 has been included with this request as Attachment 2.

Ginna established LTOP setpoints based upon the methodology Improved Technical Specifications (ITS) 5.6.6.C.3 which is essentially equivalent to NRC approved WCAP-14040-NP-2, Revision 2. It was determined that inclusion of RCS temperature measurement uncertainties would result in an operating window, between the LTOP enable temperature and the requirement for having an operable safety injection system (i.e.,  $> 350^{\circ}F$ ), that is too small to accommodate an orderly plant cooldown.

There are many conservatisms incorporated into the pressure-temperature (P/T) limits calculated using the current methodology of ASME Code Section XI, Appendix G. ASME explicitly recognized the amount of margin inherent in the Appendix G pressure-temperature limits by incorporating Code Case N-514 into the 1993 Addenda to ASME Code Section XI, Appendix G. LTOP will still function to meet the fracture toughness requirements of the pressure-retaining components of the reactor coolant pressure boundary to provide adequate margin of safety during any condition of normal operation, including anticipated operational occurrences, to which the pressure boundary will be subjected over its service lifetime. As such, use of Code Case N-514 will meet the underlying purpose of 10CFR50.60 for fracture toughness requirements. Thus, this request is made in accordance with 10CFR50.55a(a)(3)(i) in that use of Code Case N-514 provides an acceptable level of quality and safety. In addition, application of the ASME Code without the Code Case results in undue hardship per 10CFR50.55a(a)(3)(ii) in that plant operational requirement conflicts would result.

CASE  
N-514

## CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: February 12, 1992

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

## Case N-514

Low Temperature Overpressure Protection  
Section XI, Division 1

*Inquiry:* Section XI, Division 1, IWB-3730, requires that during reactor operation, load and temperature conditions be maintained to provide protection against failure due to the presence of postulated flaws in the ferritic portions of the reactor coolant pressure boundary. For those plants having low temperature overpressure protection (LTOP) systems, what load and temperature conditions under IWB-3730 may be used to provide protection against failure during reactor start-up and shutdown operation due to low temperature overpressure events that have been classified as Service Level A or B events?

*Reply:* It is the opinion of the Committee that for those plants having LTOP systems the following load and temperature conditions may be used to provide

protection against failure during reactor start-up and shutdown operation due to low temperature overpressure events that have been classified as Service Level A or B events. LTOP systems shall be effective at coolant temperatures less than 200°F or at coolant temperatures<sup>1</sup> corresponding to a reactor vessel metal temperature<sup>2</sup> less than  $RT_{NDT} + 50^{\circ}\text{F}$ , whichever is greater. LTOP systems shall limit the maximum pressure in the vessel to 110% of the pressure determined to satisfy Appendix G, para. G-2215 of Section XI, Division 1.

<sup>1</sup> The coolant temperature is the reactor coolant inlet temperature.

<sup>2</sup> The vessel metal temperature is the temperature at a distance one-fourth of the vessel section thickness from the inside surface in the vessel bellline region.  $RT_{NDT}$  is the highest adjusted reference temperature for weld or base metal in the bellline region at a distance one-fourth of the vessel section thickness from the vessel inside surface, as determined by Regulatory Guide 1.99, Rev. 2.

