

PRIORITY 1

(ACCELERATED RIDS PROCESSING)

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9508230321 DOC. DATE: 95/08/16 NOTARIZED: NO DOCKET #
FACIL: 50-269 Oconee Nuclear Station, Unit 1, Duke Power Co. 05000269 P
50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270
50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287 R
50-413 Catawba Nuclear Station, Unit 1, Duke Power Co. 05000413
50-414 Catawba Nuclear Station, Unit 2, Duke Power Co. 05000414 I
50-369 William B. McGuire Nuclear Station, Unit 1, Duke Power Co. 05000369
50-370 William B. McGuire Nuclear Station, Unit 2, Duke Power Co. 05000370

AUTH. NAME AUTHOR AFFILIATION
TUCKMAN, M.S. Duke Power Co. O
RECIP. NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk) R

SUBJECT: Provides response to GL 92-01, Rev 1, Suppl 1, "Reactor Vessel Structural Integrity." I

DISTRIBUTION CODE: A028D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6
TITLE: Generic Letter 92-01, Rev 1, Suppl 1 Responses (Reactor Vessel Structural Integrity) T

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	
	PD2-2 PD	1 1	WIENS, L	1 1	1
	MARTIN, R	1 1	NERSES, V	1 1	
INTERNAL:	ACRS	6 6	FILE CENTER 01	1 1	
	NRR/DE/EMCB	2 2	NRR/DRPE/PDI-1	1 1	D
	NUDOCS-ABSTRACT	1 1	OGC/HDS2	1 0	
	RES/DE/MEB	1 1			
EXTERNAL:	NOAC	1 1	NRC PDR	1 1	O

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL
DESK, ROOM OWFN 5D8 (415-2083) TO ELIMINATE YOUR NAME FROM
DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTR 19 ENCL 18

may

Duke Power Company
P.O. Box 1006
Charlotte, NC 28201-1006

M. S. TUCKMAN
Senior Vice President
Nuclear Generation
(704)382-2200 Office
(704)382-4360 Fax



DUKE POWER

August 16, 1995

U. S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Document Control Desk

Subject: McGuire Nuclear Station Units 1 & 2
Docket Nos. 50-369, 370
Catawba Nuclear Station Units 1 & 2
Docket Nos. 50-413, 414
Oconee Nuclear Station, Units 1, 2, & 3
Docket Nos. 50-269, 270, 287
Response to Supplement 1 of Generic Letter 92-01, Revision 1,
"Reactor Vessel Structural Integrity"

Gentlemen:

On May 19, 1995, the NRC issued Generic Letter (GL) 92-01, Revision 1, Supplement 1, "Reactor Vessel Structural Integrity," requiring addressees to identify, collect, and report any new data pertinent to analysis of structural integrity of their reactor pressure vessels (RPVs). It also requires an assessment of the impact of this new data on RPV integrity analyses relative to the requirements of Section 50.60 of Title 10 of the Code of Federal Regulations (10 CFR 50.60), 10 CFR 50.61, Appendices G and H to 10 CFR 50, and any potential impact on low temperature overpressure (LTOP) limits or pressure-temperature (P-T) limits.

The Generic Letter supplement requires that addressees provide the following information by August 17, 1995:

- (1) *a description of those actions taken or planned to locate all data relevant to the determination of reactor pressure vessel integrity, or an explanation of why the existing database is considered complete as previously submitted.*

The Supplement also requires the following information to be provided by November 20, 1995:

- (2) *an assessment of any change in best-estimate chemistry based on consideration of all relevant data;*
- (3) *a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation; and*

9508230321 950816
PDR ADDOCK 05000269
P PDR

Printed on recycled paper

1028

- (4) *a written report providing any newly acquired data as specified above and (1) the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P-T Limits in the technical specifications or (2) a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.*

This letter provides Duke Power Company's response to Requirement (1) for Oconee Units 1, 2 and 3, McGuire Units 1 and 2, and Catawba Units 1 and 2. Responses to requirements (2), (3), and (4) will be provided by November 20, 1995.

Duke Power's on going Reactor Vessel Integrity Program has always sought to account for all relevant data which may be associated with any of their reactor vessels. Duke Power is involved with three separately approved reactor vessel integrated surveillance programs (BWO-G-RVWG, Diablo Canyon Unit 2 and Calvert Cliffs Unit 1). Duke Power is working with members of the BWO-G, WOG and CEOG-RVWG to address reactor vessel integrity issues. Duke Power is also a part of NEI's newly formed "Reactor Pressure Vessel (RPV) Integrity Data Task force". It is Duke Power's intent to always maintain reactor vessel integrity by utilizing the most current data or by performing evaluations to assure all programs and calculations meet 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P-T limits.

Combustion Engineering Owners Group (CEOG) Reactor Vessel Working Group

The CEOG has formed the Reactor Vessel Working Group (RVWG) to address the issue of weld chemistry variability for C-E fabricated reactor vessel welds. This funded task will focus on compiling data from original fabrication records, research data files and log books compiled by C-E and other NSSS suppliers and utilities. The relevant data will be used to determine a best estimate chemistry for each weld heat fabricated by C-E. Duke Power has funded this project which is expected to take 18 months to compile all potentially relevant data and an additional 6 months to assess the significance of the new data (Reference CEOG-95-390, July 27, 1995 letter to the NRC).

Westinghouse Owners Group (WOG) RPV DATA Database:

The WOG Materials Subcommittee has compiled a database, called RPV DATA, of information relevant to reactor vessel integrity. The information included in the database is from original fabrication records, reactor vessel surveillance program testing, and other supplemental testing. The information incorporated in the database is from docketed GL92-01 responses and previous EPRI databases on reactor vessel integrity. Duke Power is reviewing this database to determine if it contains additional data relevant to the determination of reactor vessel integrity for all Duke Power nuclear units.

B&W Owners Group's (BWOG) Reactor Vessel Working Group

Duke Power Company has been a member of this group since its initial formation in 1977. The BWOG has been acquiring and documenting data relevant to the integrity of all Linde 80 reactor vessel weldments and base metals contained within its member plant RPVs since its formation. Duke Power will continue to work with the BWOG to address reactor vessel integrity issues for Oconee.

Oconee Units 1, 2, and 3

The Oconee vessels were designed and fabricated by Babcock & Wilcox (B&W). Since 1977 Oconee has managed its reactor vessel integrity program through an integrated program with all other operating 177-Fuel Assembly (FA) B&W plants. This integrated program has been managed through the BWOG RVWG which consists of five B&W plant utilities, five Westinghouse plant utilities (B&W fabricated reactor vessels), and B&W Nuclear Technologies. The activities of these eleven participants establish and maintain a program to demonstrate reactor vessel integrity. This program has successfully responded to regulatory concerns through an integrated system of analysis, testing, and communication. Capsules currently being irradiated in operating plants are providing the necessary data to support the operation through extended life.

Oconee's response to requirement (1) of GL 92-01 Rev. 1, Suppl. 1 is incorporated into BAW-2257 "Response to Part (1) of Generic Letter 92-01, Revision 1, Supplement 1", dated July 1995 submitted to the NRC by letter on August 1, 1995 (OG-95-1527) from the BWOG.

McGuire Unit 1

The McGuire Unit 1 reactor pressure vessel was manufactured by Combustion Engineering (C-E) in Chattanooga, Tennessee. The vessel was ordered by Westinghouse Electric Corporation under C-E Contract 2167. Therefore, pertinent data is available through both Westinghouse and ABB/C-E.

McGuire has been proactive in addressing reactor vessel integrity issues by seeking out all relevant data. Through the use of EPRI and WOG databases, McGuire identified several "sister" plants that may have pertinent data relevant to the McGuire Unit 1 Reactor Vessel Integrity Program. It was decided to integrate our Reactor Vessel Surveillance Program with two of these "sister" plants (Diablo Canyon Unit 2 & Calvert Cliffs Unit 1) to facilitate sharing and use of data. Both programs have been approved by the NRC.

McGuire is currently working with the CEOG RVWG to gather all pertinent data and develop best estimate chemistry for each weld heat fabricated by C-E. This work will not be completed for 24 months. Additional data generated by McGuire Unit 1, Diablo Canyon Unit 2 and Calvert Cliffs Unit 1 will continue to be evaluated by Duke Power and incorporated into its Reactor Vessel Integrity Program.

WCAP-13948, "Evaluation of Pressurized Thermal Shock For McGuire Unit 1, P.A. Peter was submitted to the NRC by letter dated March 17, 1994 and is McGuire Unit 1 current best-estimate chemistry values.

McGuire Unit 2 and Catawba Unit 1

The McGuire Unit 2 reactor pressure vessel was manufactured by Rotterdam Dockyard Co. in the Netherlands under Westinghouse Electric Corporation Contract No. 30664. The Catawba Unit 1 reactor pressure vessel was also manufactured by Rotterdam Dockyard Co. under Westinghouse Electric Corporation Contract No. 30743. These vessels were built in the early 70's and are similar in design. Their beltline regions were both fabricated from two ring forgings and contain only one circumferential weld which joins the intermediate and lower ring forgings. The weld wire (not Cu coated) used to fabricate the circumferential beltline welds in both vessels was low in Cu content with medium Ni. As a result of the low Cu weld in both the McGuire Unit 2 and Catawba Unit 1 vessels, they are forging limited for 10 CFR 50.61 RT_{PTS} at end of life (EOL) and are forging controlled for the current P-T limit curves and LTOP analysis. The most limiting weld material calculated EOL RT_{PTS} using surveillance capsule data is 24°F which is over 200°F below the 10CFR50.61 screening criteria. With these low EOL RT_{PTS} values and forging limited critical material, no additional information on our non-Cu coated non-limiting beltline welds will be relevant for determining the structural integrity of the reactor vessel since it is controlled by the forging properties.

WCAP-13518, "Evaluation of Pressurized Thermal Shock For McGuire Unit 2, J.M. Chicots, dated October 1992 and WCAP-13763, "Evaluation of Pressurized Thermal Shock For Catawba Unit 1, P.A. Peter, dated August 1993 are our most recent submittals containing our best-estimate chemistry values. They were submitted to the NRC by letter dated Jan 27, 1993 for McGuire Unit 2 and August 12, 1993 for Catawba Unit 1.

Catawba Unit 2

The Catawba Unit 2 reactor pressure vessel was manufactured by C-E in Chattanooga, Tennessee. The vessel was ordered by Westinghouse Electric Corporation under C-E Contract 8871. The weld wire (not Cu coated) used to fabricate the beltline welds was low in Cu and Ni content. As a result of the low Cu/Ni weld in the Catawba Unit 2 vessel, it is plate limited for 10 CFR 50.61 RT_{PTS} at EOL and is plate controlled for the current P-T limit curves and LTOP analysis. The most limiting weld material calculated EOL RT_{PTS} using surveillance capsule data is 4.5°F which is over 200°F below the 10CFR50.61 screening criteria. With these low EOL RT_{PTS} values and plate limited critical material, no additional information on our non-Cu coated non-limiting beltline welds will be relevant for determining the structural integrity of the reactor vessel since it is controlled by the plate properties.

WCAP-13874, "Evaluation of Pressurized Thermal Shock For Catawba Unit 2, P.A. Peter, dated February 1994 is the most recent submittal containing our best-estimate chemistry values for Catawba Unit 2. It was submitted to the NRC by letter dated March 2, 1994.

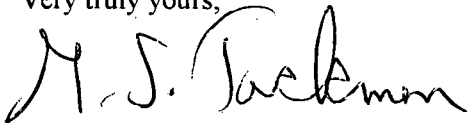
Summary

Duke Power Company has undertaken many initiatives to ensure that all data relevant to the determination of reactor vessel integrity for the Oconee, McGuire and Catawba vessels are available and considered. This work will continue through the life of our Reactor Vessel Integrity Program. It is our belief that the most current relevant chemistry data has been submitted to the NRC in our latest PTS submittals. As new data becomes available Duke Power Company will assess its relevance/significance to the integrity of the Oconee, McGuire, and Catawba vessels. Newly acquired data will be incorporated into our Reactor Vessel Integrity Program, and submittals made when appropriate.

I declare under penalty of perjury that these statements are true and correct to the best of my knowledge.

Should you have any questions or require any additional information regarding this submittal, please contact Allison Young, Corporate Licensing at 704-382-3154.

Very truly yours,

A handwritten signature in cursive script, appearing to read "M. S. Tuckman".

M. S. Tuckman
Senior Vice President
Nuclear Generation

Page 6
USNRC
August 16, 1995

xc: S.D. Ebnetter
Regional Administrator, Region II

V. Nerses, ONRR

R.E. Martin, ONRR

L.A. Weins, ONRR

G.F. Maxwell
Senior Resident Inspector (MNS)

R.J. Freudenberger
Senior Resident Inspector (CNS)

P.E. Harmon
Senior Resident Inspector (ONS)