UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 24, 1994

MEMORANDUM FOR: All NRR Project Directors

THRU: Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

FROM: Daniel G. McDonald, Senior Project Manager
Lead Project Manager - MPA B-120
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

SUBJECT: GENERIC LETTER (GL) 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY" (MPA B-120)

The subject GL is part of the staff's program to evaluate reactor vessel structural integrity. The Materials and Chemical Engineering Branch (EMCB) has completed its review of the licensees's responses to the GL.

Enclosure 1 provides three lists of Boiling Water Reactor (BWR) plants which are arranged according to the three different review groups: (1) plants with no open issues, (2) plants with at least one belt line material having uncertain end-of-life (EOL) upper-shelf energy (USE), and (3) plants with belt line material initial RT_{NDT} values determined by a method not approved by the NRC. A sample closeout letter to be sent to the BWR licensees is provided as Enclosure 2. Please replace the blank paragraph identified as "INSERT" in the sample closeout letter with the paragraph under one of the three groups to which the plant belongs. Each closeout letter will include (as enclosures) two tables of data including a key to the nomenclature used. This data was compiled based on each licensee's response(s) to Generic Letter (GL) 92-01 and other information that has been previously docketed. These tables, along with a key to the nomenclature used in the tables, are provided as Enclosure 3. The closeout letter notes that the information in the tables will be used for future NRC assessments of the licensee's reactor pressure vessel(s) unless we are informed within 30 days from the date of the letter of any discrepancies.

Contacts:
D. McDonald, LPM
504-1408

S. Sheng, EMCB
504-2708

240001

FOR /s/ Dan McDonald

For 8 of the 12 plants in Group 1, the licensees are only requested to verify the accuracy of the information in the tables provided with the closeout letters. For the four plants in Group 1 that use the topical report NEDO-32205 as their licensing bases, the licensees need to provide confirmation of plant-specific applicability of the topical report to their plants (as specified in Appendix B of NEDO-32205, Revision 1) and submit a request for approval of the topical report as the basis for demonstrating compliance with 10 CFR Part 50, Appendix G, Paragraph IV.A.1. These reviews will be plant-specific licensing actions.

For the plant in Group 2, the Project Manager is to request the licensee to submit a schedule for performing the equivalent margins analysis to resolve the issue of uncertain EOL USE for welds. This submittal will be reviewed as a plant-specific licensing action.

For all of the plants in Group 3, General Electric (GE) is in the process of validating its methodology for resolving the initial RT_{NDT} determination issue and will document the results in a topical report. The BWR Owners Group is obtaining approval from its members to provide the GE topical report to the NRC staff for its review and approval. Project Managers are to request that the licensees provide in their responses to the closeout letter their commitment to this effort or their plant-specific approaches to resolve this issue. In addition, the licensees for 22 of the remaining plants in Group 3 which refer to topical report, NEDO-32205, as their licensing bases, need to provide confirmation of the plant-specific applicability of the topical report to their plant (as specified in Appendix B of NEDO-32205, Revision 1) and submit a request for approval of the topical report as the basis for demonstrating compliance with 10 CFR Part 50, Appendix G, Paragraph IV.A.1. These reviews will be plant-specific actions.

All BWR Project Managers are requested to use the date of the closeout letter as the licensing action complete date. Please enter the date and accession number in WISP. I will provide guidance on the implementation complete date shortly after the 30-day responses are received and EMCB determines that they are acceptable.

As noted in the letters, there will be some plant-specific followup effort which is the result of (but not part of) the GL 92-01 effort. I request that the Project Managers provide me the TAC numbers they open for these plant-specific licensing actions. I will assist EMCB in tracking the closure of these actions. EMCB will issue a NUREG detailing the GL 92-01 effort and the status of all issues, including plant-specific actions, relating to reactor vessel structural integrity.

EMCB expects to provide similar closeout letters and tables for Pressurized Water Reactors by April 15, 1994. Please contact me if you have any questions.

Daniel G. McDonald, Senior Project Manager
Lead Project Manager - MPA B-120
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. List of Plants
2. Closeout Letter
3. Nomenclature and Tables

cc w/enclosures 1 and 2:
ADPR/NRR
S. Varga
J. Roe
D. Crutfchfield
DRPE/DRPW Assistant Directors
DRPE/DRPW Project Managers
Technical Assistant, DRPE
Technical Assistant, DRPW

GROUP 3: PLANTS WITH BELT LINE MATERIAL INITIAL RT_{NDT} VALUES DETERMINED BY UNVALIDATED METHOD

Plant	TAC Number
*Browns Ferry 1	M83438
*Brunswick 1	M83441
*Brunswick 2	M83442
*Cooper	M83455
*Dresden 2	M83458
*Dresden 3	M83459
*Duane Arnold	M83460
Fermi 2	M83463
*FitzPatrick	M83464
*Hatch 1	M83469
Hatch 2	M83470
*Hope Creek	M83471
*Lasalle 1	M83475
*Lasalle 2	M83476
*Limerick 1	M83477
*Limerick 2	M83478
*Monticello	M83485
*Oyster Creek	M83490
*Peach Bottom 2	M83495
*Quad Cities 1	M83501
*Quad Cities 2	M83502
*Susquehanna 1	M83518
*Susquehanna 2	M83519
*WNP 2	M83527

* Plants that use the topical report, NEDO-32205, Revision 1, as their licensing bases.

INSERT 3
(FOR PLANTS WITHOUT THE SYMBOL "*")

As a result of our GL 92-01 review, the NRC staff has identified one open issue for your plant(s). The initial RT_{NDT} values determined by General Electric's (GE) initial methodology have not been validated and the BWR Owners Group topical report, GE-NE-523-109-0893, entitled, "Basis for GE RT_{NDT} Estimation Method," did not resolve the issue. GE is in the process of validating its methodology for resolving the initial RT_{NDT} determination issue and will document the results in a topical report. The BWR Owners Group is obtaining approval from its members to provide the GE topical report to the NRC staff for its review and approval. We request that you submit within 30 days a commitment to the BWR Owners Group effort or a schedule for a plant-specific analysis to resolve this issue. Further, we request that you verify that the information you have provided for your facility(ies) has been accurately entered in the data base. If no comments are made in your response to the second request, the staff will use the information in the tables for

GENERIC LETTER (GL) 92-01 REVIEW STATUS

GROUP 1: PLANTS WITH NO OPEN ISSUES

Plant	TAC Number
*Browns Ferry 2	M83439
*Browns Ferry 3	M83440
Clinton	M83450
Grand Gulf 1	M83466
Millstone 1	M83482
Nine Mile Pt. 1	M83486
Nine Mile Pt. 2	M83487
Perry	M83497
*Peach Bottom 3	M83496
Pilgrim 1	M83498
River Bend 1	M83503
*Vermont Yankee	M83521

* Plants that use the topical report, NEDO-32205, Revision 1, as their licensing bases.

INSERT 1
(FOR PLANTS WITHOUT THE SYMBOL "*")

We request that you verify the information you have provided for your facility(ies) has been accurately entered in the data base. No response is necessary unless an inconsistency is identified. If no comments are received within 30 days from the date of this letter, the staff will consider your actions related to GL 92-01, Revision 1, to be complete.

INSERT 1*
(FOR THE 4 PLANTS WITH THE SYMBOL "*")

We request that, within 30 days, you provide confirmation of the plant-specific applicability of the topical report, NEDO-32205, Revision 1, (as specified in Appendix B of that report) and submit a request for approval of the topical report as the basis for demonstrating compliance with 10 CFR Part 50, Appendix G, Paragraph IV.A.1. This review will be a plant-specific licensing action. We further request that you verify that the information you have provided for your facility(ies) has been accurately entered in the data base. If no comments are made in your response to the last request, the staff will use the information in the tables for future NRC assessments of your reactor pressure vessel. Once your confirmation of the topical report applicability and request for approval are received, the staff will consider your actions related to GL 92-01, Revision 1, to be complete.

GROUP 2: PLANT WITH AT LEAST ONE BELT LINE MATERIAL HAVING UNCERTAIN EOL USE

WELD:

Plant	TAC Number
Big Rock Point	M83435

INSERT 2
(BIG ROCK POINT)

As a result of our GL 92-01 review, the staff has identified one open issue for your plant. The end-of-life (EOL) USE of the circumferential weld cannot be determined because the heat number of the weld wire used for fabricating that weld can not be traced and the surveillance weld is only representative of the axial welds. We request that you submit within 30 days a schedule for performing an equivalent margins analysis to resolve the issue of uncertain EOL USE for the circumferential weld. Further, we request that you verify that the information you have provided for your facility has been accurately entered in the data base. If no comments are made in your response to the second request, the staff will use the information in the tables for future NRC assessments of your reactor pressure vessel. Once your response is received and your schedule is determined to be satisfactory, the staff will consider your actions related to GL 92-01, Revision 1, to be complete. The submittal of the equivalent margins analysis for the circumferential weld will be reviewed as a plant-specific licensing action.

future NRC assessments of your reactor pressure vessel. Once your commitment to the BWR Owners Group effort is received or your schedule for providing a plant-specific analysis is considered satisfactory, the staff will consider your actions related to GL 92-01, Revision 1, to be complete. Plant-specific licensing action(s) will be initiated to resolve the RT_{NDT} issue for your plant(s) either by referencing the topical report when it is reviewed and approved or for reviewing your plant-specific analysis.

INSERT 3*
(FOR PLANTS WITH THE SYMBOL "*")

As a result of our GL 92-01 review, the NRC staff has identified one open issue for your plant. The initial RT_{NDT} values determined by General Electric's (GE) initial methodology have not been validated and the BWR Owners Group report, GE-NE-523-109-0893, entitled, "Basis for GE RT_{NDT} Estimation Method," did not resolve the issue. GE is in the process of validating its methodology for resolving the initial RT_{NDT} determination issue and will document the results in a topical report. The BWR Owners Group is obtaining approval from its members to provide the GE topical report to the NRC staff for its review and approval. We request that you submit within 30 days a commitment to the BWR Owners Group effort or a schedule for a plant-specific analysis to resolve this issue. Further, we request that you provide confirmation of the plant-specific applicability of the topical report, NEDO-32205, Revision 1, (as specified in Appendix B of that report) and submit a request for approval of the topical report as the basis for demonstrating compliance with 10 CFR Part 50, Appendix G, Paragraph IV.A.1 We further request that you verify that the information you have provided for your facility(ies) has been accurately entered in the data base. If no comments are made in your response to the last request, the staff will use the information in the tables for future NRC assessments of your reactor pressure vessel.

Once you have (1) confirmed the applicability of the topical report, NEDO-32205, Revision 1, to your plant(s), (2) submitted the request for approval, and (3) provided your commitment to the BWR Owners Group effort or a satisfactory schedule for providing a plant-specific analysis, the staff will consider your actions related to GL 92-01, Revision 1, to be complete. Plant-specific licensing action(s) will be initiated to resolve these issues.

ENCLOSURE 2

SAMPLE LETTER FOR CLOSEOUT OF GL 92-01
[DATE]

Docket No.(s)

[LICENSEE ADDRESSEE]

Dear [NAME]:

SUBJECT: GENERIC LETTER (GL) 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY," [UTILITY], [UNITS] (TAC NO.(s))

By letter(s) dated [ ], [utility] provided its response to GL 92-01, Revision 1. The NRC staff has completed its review of your response(s). Based on its review, the staff has determined that [utility] has provided the information requested in GL 92-01.

The GL is part of the staff's program to evaluate reactor vessel integrity for Pressurized Water Reactors (PWRs) and Boiling Water Reactors (BWRs). The information provided in response to GL 92-01, including previously docketed information, is being used to confirm that licensees satisfy the requirements and commitments necessary to ensure reactor vessel integrity for their facilities.

A substantial amount of information was provided in response to GL 92-01, Revision 1. These data have been entered into a computerized data base designated Reactor Vessel Integrity Database (RVID). The RVID contains the following tables: A pressurized thermal shock (PTS) table for PWRs, a pressure-temperature limit table for BWRs and an upper-shelf energy (USE) table for PWRs and BWR's. Enclosure 1 provides the PTS and/or pressure temperature table(s), Enclosure 2 provides the USE table(s) for your facility(ies), and Enclosure 3 provides a key for the nomenclature used in the tables. The tables include the data necessary to perform USE, pressure-temperature limit, and RT_{pts} evaluations. These data were taken from your response(s) to GL 92-01 and previously docketed information. The information in the RVID for your facility(ies) will be considered accurate at this point in time and will be used in the staff's assessments related to vessel structural integrity. References to the specific source of the data are provided in the tables.

[INSERT]

The information requested by this letter is within the scope of the overall burden estimated in GL 92-01, Revision 1, "Reactor Vessel Structural

Integrity, 10 CFR 50.54(f)." The estimated average number of burden hours is 200 person hours for each addressee's response. This estimate pertains only to the identified response-related matters and does not include the time required to implement actions required by the regulations. This action is covered by the Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994.

Sincerely,

Project Manager
PD/Branch Division
Office of Nuclear Reactor Regulation

Enclosures:
1. Pressurized Thermal Shock or Pressure-Temperature Limit Table(s)
2. Upper-Shelf Energy Table(s)
3. Nomenclature Key

cc w/enclosures:
See next page

Enclosure 3

Nomenclature and Tables

PRESSURE-TEMPERATURE LIMIT TABLES AND USE TABLES FOR ALL BWR PLANTS

NOMENCLATURE

Pressure-Temperature Limits Table

Column 1: Plant name and date of expiration of license.
Column 2: Beltline material location identification.
Column 3: Beltline material heat number; for some welds that a single-wire or tandem-wire process has been reported, (S) indicates single wire was used in the SAW process, (T) indicates tandem wire was used in the SAW process.
Column 4: End-of-life (EOL) neutron fluence at vessel inner wall; cited directly from inner diameter (ID) value or calculated by using Regulatory Guide (RG) 1.99, Revision 2 neutron fluence attenuation methodology from the quarter thickness (T/4) value reported in the latest submittal (GL 92-01, PTS, or P/T limits submittals).
Column 5: Unirradiated reference temperature.
Column 6: Method of determining unirradiated reference temperature (IRT).

Plant-Specific
This indicates that the IRT was determined from tests on material removed from the same heat of the beltline material.

MTEB 5-2
This indicates that the unirradiated reference temperature was determined from following MTEB 5-2 guidelines for cases where the IRT was not determined using American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, NB-2331, methodology.

Generic
This indicates that the unirradiated reference temperature was determined from the mean value of tests on material of similar types.

Column 7: Chemistry factor for irradiated reference temperature evaluation.
Column 8: Method of determining chemistry factor

Table
This indicates that the chemistry factor was determined from the chemistry factor tables in RG 1.99, Revision 2.

Calculated
This indicates that the chemistry factor was determined from surveillance data via procedures described in RG 1.99, Revision 2.

Column 9: Copper content; cited directly from licensee value except when more than one value was reported. (Staff used the average value in the latter case.)

No Data
This indicates that no copper data has been reported and the default value in RG 1.99, Revision 2, will be used by the staff.

Column 10: Nickel content; cited directly from licensee value except when more than one value was reported. (Staff used the average value in the latter case.)

No Data

This indicates that no nickel data has been reported and the default value in RG 1.99, Revision 2, will be used by the staff.

Upper Shelf Energy Table

Column 1: Plant name and date of expiration of license.
Column 2: Beltline material location identification.
Column 3: Beltline material heat number; for some welds that a single-wire or tandem-wire process has been reported, (S) indicates single wire was used in the SAW process. (T) indicates tandem wire was used in the SAW process.
Column 4: Material type; plate types include A 533B-1, A 302B, A 302B Mod., and forging A 508-2; weld types include SAW welds using Linde 80, 0091, 124, 1092, ARCOS-B5 flux, Rotterdam welds using Graw Lo, SMIT 89, LW 320, and SAF 89 flux, and SMAW welds using no flux.
Column 5: EOL upper-shelf energy (USE) at T/4; calculated by using the EOL fluence and either the cooper value or the surveillance data. (Both methods are described in RG 1.99, Revision 2.)

EMA
This indicates that the USE issue may be covered by the approved equivalent margins analysis in the BWR Owners Group Topical Report: NEDO-32205, Revision 1.

Column 6: EOL neutron fluence at T/4 from vessel inner wall; cited directly from T/4 value or calculated by using RG 1.99, Revision 2 neutron fluence attenuation methodology from the ID value reorted in the latest submittal (GL 92-01, PTS, or P/T limits submittals).

Column 7: Unirradiated USE.

EMA
This indicates that the USE issue may be covered by the approved equivalent margins analysis in the BWR Owners Group Topical Report: NEDO-32205, Revision 1.

Column 8: Method of determining unirradiated USE

Direct
For plates, this indicates that the unirradiated USE was from a transverse specimen. For welds, this indicates that the unirradiated USE was from test date.

65%
This indicates that the unirradiated USE was 65% of the USE from a longitudinal specimen.

Generic
This indicates that the unirradiated USE was reported by the licensee from other plants with similar materials to the beltline material.

NRC generic
This indicates that the unirradiated USE was derived by the staff from other plants with similar materials to the beltline material.

10, 30, 40, or 50 °F
This indicates that the unirradiated USE was derived from Charpy test conducted at 10, 30, 40, or 50 °F.

Surv. Weld
This indicates that the unirradiated USE was from the surveillance weld having the same weld wire heat number.

Equiv. to Surv. Weld
This indicates that the unirradiated USE was from the surveillance weld having different weld wire heat number.

Sister Plant
This indicates that the unirradiated USE was derived by using the reported value from other plants with the same weld wire heat number.

Blank
indicates that there is insufficient data to determine the unirradiated USE. These licensees will utilize Topical Report NEDO-32205, Revision 1 to demonstrate USE compliance to Appendix G, 10 CFR Part 50.

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Fitz-Patrick	Lower Shell	C3394-1	2.51E18	-10°F	Plant Specific	73.6	Table	0.11	0.56
EOL: 10/17/2014	Lower Shell	C3376-2	2.51E18	24°F [1]	Plant Specific	91	Table	0.13	0.60
	Lower Shell	C3103-2	2.51E18	-2°F [1]	Plant Specific	100	Table	0.14	0.60
	Lower Int. Shell	C3368-1	2.51E18	-10°F [1]	Plant Specific	81.8	Table	0.12	0.54
	Lower Int. Shell	C3301-1	2.51E18	-18°F [1]	Plant Specific	134	Table	0.18	0.60
	Lower Int. Shell	C3278-2	2.51E18	-10°F [1]	Plant Specific	91	Table	0.13	0.60
	Lower Int. Axial Welds 1-233A/C	13253/12008	2.51E18	-50°F	Plant Specific	223.9	Table	0.26	0.87
	Lower Shell Axial Welds 2-233A/C	27204/12008	2.51E18	-22°F [1]	Plant Specific	241.3	Table	0.25	0.99
	Circ. Weld 1-240	305414	2.51E18	-50°F	Plant Specific	203.75	Table	0.33	0.59

Reference for FitzPatrick

IRT, fluence, and chemical composition data are from July 9, 1992, letter from R. E. Beedle (PASNY) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1

[1]Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
FitzPatrick EOL: 10/17/2014	Lower Shell	C3394-1	A 533B-1	75	1.7E18	86	65%
	Lower Shell	C3376-2	A 533B-1	66	1.7E18	77	65%
	Lower Shell	C3103-2	A 533B-1	70	1.7E18	83	65%
	Lower Int. Shell	C3368-1	A 533B-1	58	1.7E18	67	65%
	Lower Int. Shell	C3301-1	A 533B-1	68	1.7E18	83	65%
	Lower Int. Shell	C3278-2	A 533B-1	76	1.7E18	85	65%
	Lower Int. Axial Welds 1-233A/C	13253/ 12008	Linde 1092, SAW	76	1.7E18	104	Direct
	Lower Shell Axial Welds 1-233A/C	27204/ 12008	Linde 1092, SAW	EMA[2]	1.7E18	EMA[2]	---
	Circ. weld 1-240	305414	Linde 1092, SAW	EMA[2]	1.7E18	EMA[2]	---

Reference for FitzPatrick

Fluence, chemical composition, and UUSE data are from July 9, 1992, letter from R. E. Beedle (PASNY) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Nine Mile Point 1	Upper Shell G-307-3	P2074	2.21E18	28°F	Plant Specific	134.6	Table	0.20	0.48
EOL: 8/22/2009	Upper Shell G-307-4	P2076	2.21E18	40°F	Plant Specific	173.85	Table	0.27	0.53
	Upper Shell G-307-10	P2091	2.21E18	20°F	Plant Specific	148.85	Table	0.22	0.51
	Lower Shell G-8-1	P2112	2.21E18	36°F	Plant Specific	153.95	Table	0.23	0.51
	Lower Shell G-8-3	P2130	2.21E18	-3°F	Plant Specific	130.2	Table	0.18	0.56
	Lower Shell G-8-4	P2130	2.21E18	-3°F	Plant Specific	130.2	Table	0.18	0.56
	Lower Int. Shell Axial Welds 2-564A/C	86054	2.21E18	-50°F	Generic	112.0	Table	0.22	0.20
	Lower Int./Lower Shell Circ. Weld 3-564	1248	2.21E18	-50°F	Generic	112.0	Table	0.22	0.20
	Lower Shell Axial Welds 2-564D/F	86054	2.21E18	-50°F	Generic	112.0	Table	0.22	0.20

Reference for Nine Mile Point 1

Fluence, chemical composition, and IRT data are from July 2, 1992, letter from C. D. Terry (NMPCo) to USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

Plant Name	Beltline Ident.	Heat No.	Material Type	USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Nine Mile Point 1 EOL: 8/22/2009	Upper Shell G-307-3	P2074	A 302B Mod.	53	1.44E18	65	65%
	Upper Shell G-307-4	P2076	A 302B Mod.	EMA[2]	1.44E18	52	65%
	Upper Shell G-307-10	P2091	A 302B Mod.	50	1.44E18	63	65%
	Lower Shell G-8-1	P2112	A 302B Mod.	EMA[2]	1.44E18	53	65%
	Lower Shell G-8-3	P2130	A 302B Mod.	53	1.44E18	64	Direct
	Lower Shell G-8-4	P2130	A 302B Mod.	53	1.44E18	64	Direct
	Lower Int. Shell Axial Welds 2-564A/C	86054	ARCOS B-5, SAW	57	1.44E18	75[3]	NRC Generic
	Lower Int./Lower Shell Circ. Weld 3-564	1248	ARCOS B-5, SAW	57	1.44E18	75[3]	NRC Generic
	Lower Shell Axial Welds 2-564D/F	86054	ARCOS B-5, SAW	57	1.44E18	75[3]	NRC Generic

Reference for Nine Mile Point 1

UUSE, chemical composition, and fluence data are from July 2, 1992, letter from C. D. Terry (NMPCo) to USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

Note: Unirradiated USE for welds are lower two standard deviation value from the surveillance weld

[2]Plant specific equivalent margins analysis has been approved by NRC.

[3]Generic value for welds fabricated by Combustion Engineering using Linde 1092, 0091 and 123 and Arcos B-5 fluxes (Ref: Letter from S. Bloom, NRR, to T.L. Patterson, OPPD, dated December 3, 1993)

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Nine Mile Point 2	#2 Shell Ring	C3065-1	1.72E18	-10°F	Plant Specific	37	Table	0.06	0.63
EOL: 10/21/2026	#2 Shell Ring	C3121-2	1.72E18	0°F	Plant Specific	58	Table	0.09	0.65
	#2 Shell Ring	C3147-1	1.72E18	0°F	Plant Specific	74.45	Table	0.11	0.63
	#1 Shell Ring	C3147-2	1.72E18	0°F	Plant Specific	74.45	Table	0.11	0.63
	#1 Shell Ring	C3066-2	1.72E18	-20°F	Plant Specific	44	Table	0.07	0.64
	#1 Shell Ring	C3065-2	1.72E18	10°F	Plant Specific	37	Table	0.06	0.63
	#2 Shell Axial Welds BD/BF	5P5657	1.72E18	-60°F	Plant Specific	95	Table	0.07	0.71
	#2 Shell Axial Welds BD/BF	5P5657	1.72E18	-60°F	Plant Specific	54	Table	0.04	0.89
	#1 Shell Axial Welds BA/BC	5P6214B	1.72E18	-50°F	Plant Specific	27	Table	0.02	0.82
	#1 Shell Axial Welds BA/BC	5P6214B	1.72E18	-40°F	Plant Specific	20	Table	0.01	0.70
	Circ. Weld	4P7465 (S)	1.72E18	-60°F	Plant Specific	27	Table	0.02	0.82
	Circ. Weld	4P7465 (T)	1.72E18	-60°F	Plant Specific	27	Table	0.02	0.80
	Circ. Weld	4P7216 (S)	1.72E18	-50°F	Plant Specific	82	Table	0.06	0.85
	Circ. Weld	4P7216 (T)	1.72E18	-80°F	Plant Specific	54	Table	0.04	0.83

Reference for Nine Mile Point 2

Fluence, chemical composition, and IRT data are from July 2, 1992, letter from C. D. Terry (NMPCo) to USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

NOTE: Nine Mile Point 2 has a margin that is specially calculated: $M = 2 \cdot \mathrm{sqrt}[(CF \cdot ff/w)^2 + 100]$

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Nine Mile Point 2 EOL: 10/21/2026	#2 Shell Ring	C3065-1	A 533B-1	83	1.18E18	94	Direct
	#2 Shell Ring	C3121-2	A 533B-1	63	1.18E18	71	Direct
	#2 Shell Ring	C3147-1	A 533B-1	67	1.18E18	70	Direct
	#1 Shell Ring	C3147-2	A 533B-1	76	1.18E18	86	Direct
	#1 Shell Ring	C3066-2	A 533B-1	71	1.18E18	80	Direct
	#1 Shell Ring	C3065-2	A 533B-1	74	1.18E18	83	Direct
	#2 Shell Axial Welds BD/BF	5P5657	Linde 124, SAW	74	1.18E18	85	Direct
	#2 Shell Axial Welds BD/BF	5P5657	Linde 124, SAW	78	1.18E18	88	Direct
	#1 Shell Axial Welds BA/BC	5P6214B	Linde 124, SAW	78	1.18E18	88	Direct
	#1 Shell Axial Welds BA/BC	5P6214B	Linde 124, SAW	85	1.18E18	96	Direct
	Circ. Weld	4P7465 (S)	Linde 124, SAW	90	1.18E18	102	Direct
	Circ. Weld	4P7465 (T)	Linde 124, SAW	97	1.18E18	110	Direct
	Circ. Weld	4P7216 (S)	Linde 124, SAW	78	1.18E18	89	Direct
	Circ. Weld	4P7216 (T)	Linde 124, SAW	87	1.18E18	98	Direct

Reference for Nine Mile Point 2

UUSE, chemical composition, and fluence data are from July 2, 1992, letter from C. D. Terry (NMPCo) to USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Hope Creek EOL: 4/11/2026	Int. Shell	5K3025-1	3.4E17	19°F	Plant Specific	112.75	Table	0.15	0.71
	Int. Shell	5K2608-1	3.4E17		Plant Specific	58	Table	0.09	0.58
	Int. Shell	5K2698-1	3.4E17	19°F	Plant Specific	65	Table	0.10	0.58
	Lower Int. Shell	5K2963-1-2	1.59E18	-10°F	Plant Specific	44	Table	0.07	0.58
	Lower Int. Shell	5K2530-1-2	1.59E18	19°F [1]	Plant Specific	51	Table	0.08	0.56
	Lower Int. Shell	5K3238-1-2	1.59E18	7°F [1]	Plant Specific	58	Table	0.09	0.63
	Lower Shell	5K3230-1-2	1.59E18	-10°F	Plant Specific	44	Table	0.07	0.56
	Lower Shell	6C35-1-2	1.59E18	-11°F [1]	Plant Specific	58	Table	0.09	0.54
	Lower Shell	6C45-1-2	1.59E18	1°F [1]	Plant Specific	51	Table	0.08	0.57
	Axial Welds for Lower Shell	D53040	1.59E18	-30°F	Plant Specific	106.3	Table	0.08	0.63
	Circ. Weld between Lower-Int. & Lower Shells	D53040	1.59E18	-30°F	Plant Specific	106.3	Table	0.08	0.63
	Circ. Weld between Int. and Lower-Int. Shells	D55733	3.4E17	-40°F	Plant Specific	126.4	Table	0.10	0.68
	Axial Welds for Int. Shell	D53040	3.4E17	-49°F	Plant Specific	126.4	Table	0.10	0.68
	LPCI Nozzle Welds	001-01205	2.3E17	-40°F	Plant specific	27	Table	0.02	0.51
		504-01205	2.3E17	-31°F	Plant Specific	20	Table	0.01	0.51
		519-01205	2.3E17	-49°F	Plant Specific	20	Table	0.01	0.53

Reference for Hope Creek

Fluence, chemical composition, and IRT data are from June 30, 1992, letter from S. Miltenberger (PSEG) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

NOTE: LPCI nozzles have eight SMAW welds that were made of wires of three heat numbers.

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Hope Creek EOL: 4/11/2026	Int. Shell	5K3025-1	A 533B-1	EMA[2]	2.4E17	EMA[2]	
	Int. Shell	5K2608-1	A 533B-1	EMA[2]	2.4E17	EMA[2]	
	Int. Shell	5K2698-1	A 533B-1	EMA[2]	2.4E17	EMA[2]	
	Lower Int. Shell	5K2963-1-2	A 533B-1	67	1.1E18	75	Direct
	Lower Int. Shell	5K2530-1-2	A 533B-1	67	1.1E18	75	Direct
	Lower Int. Shell	5K3238-1-2	A 533B-1	EMA[2]	1.1E18	EMA[2]	
	Lower Shell	5K3230-1-2	A 533B-1	EMA[2]	1.1E18	EMA[2]	
	Lower Shell	6C35-1-2	A 533B-1	EMA[2]	1.1E18	EMA[2]	
	Lower Shell	6C45-1-2	A 533B-1	67	1.1E18	75	Direct
	Axial Welds for Lower Shell	D53040	Flux type unknown, SAW	117	1.1E18	135	Surv. Weld
	Circ. Weld between Lower-Int. & Lower Shells	D53040	Flux type unknown, SAW	117	1.1E18	135	Surv. Weld
	Circ. Weld between Int. and Lower-Int. Shells	D55733	Flux type unknown, SAW	61	2.4E17	68	10°F data
	Axial Welds for Int. Shell	D53040	Flux type unknown, SAW	122	2.4E17	135	Surv. Weld
	LPCI Nozzle Welds	504-01205 001-01205 579-01205	SMAW	EMA[2]	1.6E17	EMA[2]	

Reference for Hope Creek

Fluence, chemical composition, and IRT data are from June 30, 1992, letter from S. Miltenberger (PSEG) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity, 10 CFR 50.54(f)

NOTE: LPCI nozzles have eight SMAW welds that were fabricated using weld wires of three heat numbers.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Limerick 1	Shell Course #1, 14-1	C7688-1	1.73E18	10°F [1]	Plant specific	81.2	Table	0.12	0.51
EOL: 10/ 26/2024	Shell Course #1 14-2	C7698-2	1.73E18	10°F [1]	Plant specific	72.8	Table	0.11	0.48
	Shell Course #1 14-3	C7688-2	1.73E18	10°F [1]	Plant specific	81.2	Table	0.12	0.51
	Shell Course #2 17-1	C7689-1	1.73E18	10°F [1]	Plant specific	72.8	Table	0.11	0.48
	Shell Course #2 17-2	C7677-1	1.73E18	20°F [1]	Plant specific	73	Table	0.11	0.50
	Shell Course #2 17-3/	C7698-1	1.73E18	10°F [1]	Plant specific	72.8	Table	0.11	0.48
	Axial Welds	662A746	1.73E18	-20°F [1]	Plant specific	41	Table	0.03	0.88
	Axial Welds	1P4218	1.73E18	-50°F [1]	Plant specific	82	Table	0.06	0.89
	Circ. Weld	07L857/ B101A27A	1.73E18	-6°F [1]	Plant specific	41	Table	0.03	0.97
	Circ. Weld	09M057/ C109A27A	1.73E18	-32°F [1]	Plant specific	41	Table	0.03	0.89
	Circ. Weld	640892/ J424B27AE	1.73E18	-60°F [1]	Plant specific	122	Table	0.09	1.00
	Circ. Weld	5P6756	1.73E18	-60°F [1]	Plant specific	108	Table	0.08	0.96

Reference for Limerick 1

Plate Cu, P, Ni; IRT, and fluence data are from Table 5.3-5 of FSAR enclosed in November 11, 1992 letter (Supplemental response to GL 92-01, Rev. 1) to NRC. Weld Cu and P, and IRT data are from the same table.

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Limerick 1 EOL: 10/26/2024	Shell Course #1, 14-1	C7688-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #1 14-2	C7698-2	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #1 14-3	C7688-2	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #2 17-1	C7689-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #2 17-2	C7677-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #2 17-3/	C7698-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Axial Welds	662A746	Flux type unknown, SMAW	EMA[2]	1.2E18	EMA[2]	---
	Axial Welds	IP4218	Linde 124, SAW	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	07L857/ B101A27A	Flux and weld type unknown	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	09M057/ C109A27A	Flux and weld type unknown	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	640892/ J424B27AE	Flux and weld type unknown	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	5P6756	Flux and weld type unknown	EMA[2]	1.2E18	EMA[2]	---

Reference for Limerick 1

Plate Cu, P, Ni; UUSE; and fluence data are from Table 5.3-5 of FSAR enclosed in November 11, 1992 letter to NRC (Supplemental to GL 92-01 response). Weld Cu and P, and IRT data are from the same table.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Limerick 2	Shell Course #1 14-1	B3312-1	1.73E18	10°F [1]	Plant specific	90.4	Table	0.13	0.58
EOL: 10/ 26/2024	Shell Course #1 14-2	B3416-1	1.73E18	40°F [1]	Plant specific	101.25	Table	0.14	0.65
	Shell Course #1 14-3	C9621-2	1.73E18	22°F [1]	Plant specific	110	Table	0.15	0.60
	Shell Course #2 17-1	C9569-2	1.73E18	10°F [1]	Plant specific	73.1	Table	0.11	0.51
	Shell Course #2 17-2	C9526-1	1.73E18	10°F [1]	Plant specific	73.6	Table	0.11	0.56
	Shell Course #2 17-3	C9526-2	1.73E18	10°F [1]	Plant specific	73.6	Table	0.11	0.56
	Axial Welds	432A2671/ H019A27A	1.73E18	-12°F [1]	Plant specific	54	Table	0.04	1.08
	Axial Welds	661A746/ H013A27A	1.73E18	-20°F [1]	Plant specific	41	Table	0.03	0.88
	Circ. Weld	07L857/ B101A27A	1.73E18	-6°F [1]	Plant specific	41	Table	0.03	0.97
	Circ. Weld	09M057/ C109A27A	1.73E18	-32°F [1]	Plant specific	41	Table	0.03	0.89
	Circ. Weld	03M014/ C118A27A	1.73E18	-34°F [1]	Plant specific	20	Table	0.01	0.94
	Circ. Weld	640892/ J424B27AE	1.73E18	-60°F [1]	Plant specific	122	Table	0.09	1.00

Reference for Limerick 2

Cu, Ni, and P; fluence, and IRT data are from Table 5.3-5 of the FSAR enclosed in November 11, 1992 letter (Supplemental response to GL 92-01, Rev. 1) to NRC.

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Limerick 2 EOL: 10/26/2024	Shell Course #1 14-1	B3312-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #1 14-2	B3416-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #1 14-3	C9621-2	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #2 17-1	C9569-2	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #2 17-2	C9526-1	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Shell Course #2 17-3	C9526-2	A 533B-1	EMA[2]	1.2E18	EMA[2]	---
	Axial Welds	432A2671/ H019A27A	SMAW	EMA[2]	1.2E18	EMA[2]	---
	Axial Welds	661A746/ H013A27A	SMAW	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	07L857/ B101A27A	SMAW	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	09M157/ C104A27A	SMAW	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	03M014/ C118A27A	SMAW	EMA[2]	1.2E18	EMA[2]	---
	Circ. Weld	640897/ J424B27AE	SMAW	EMA[2]	1.2E18	EMA[2]	---

Reference for Limerick 2

Cu, Ni, and P; fluence, and UUSE data are from Table 5.3-5 of the FSAR enclosed in November 11, 1992 letter to NRC (Supplemental to GL 92-01 response).

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Peach Bottom 2	Lower Shell	C2791-2	8.0E17	-8°F [1]	Plant specific	81.4	Table	0.12	0.52
EOL: 1/31/2008	Lower Shell	C2761-1	8.0E17	-14°F [1]	Plant specific	73.4	Table	0.11	0.54
	Lower Shell	C2873-2	8.0E17	-20°F	Plant specific	82.4	Table	0.12	0.57
	Lower Int. Shell	C2894-2	8.0E17	-20°F	Plant specific	85.6	Table	0.13	0.42
	Lower Int. Shell	C2873-1	8.0E17	-6°F [1]	Plant specific	82.4	Table	0.12	0.57
	Lower Int. Shell	C2761-2	8.0E17	-20°F	Plant specific	73.4	Table	0.11	0.54
	Axial Welds	37C065	8.0E17	-45°F	generic	109.25	Table	0.21	0.21
	Circ. Weld	S-3986	8.0E17	-32°F [1]	Plant specific	82	Table	0.06	0.97

Reference for Peach Bottom 2

Fluence, chemical composition, and IRT data are from July 10, 1992, letter from G. J. Beck (PECo) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)"

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Peach Bottom 2 EOL: 1/31/2008	Lower Shell	C2791-2	A 302B Mod.	EMA[2]	5.5E17	EMA[2]	---
	Lower Shell	C2761-1	A 302B Mod.	EMA[2]	5.5E17	EMA[2]	---
	Lower Shell	C2873-2	A 302B Mod.	EMA[2]	5.5E17	EMA[2]	---
	Lower Int. Shell	C2894-2	A 302B Mod.	EMA[2]	5.5E17	EMA[2]	---
	Lower Int. Shell	C2873-1	A 302B Mod.	EMA[2]	5.5E17	EMA[2]	---
	Lower Int. Shell	C2761-2	A 302B Mod.	74	5.5E17	82	65%
	Axial Welds	37C065	Flux type unknown, SAW	EMA[2]	5.5E17	EMA[2]	---
	Circ. Weld	S-3986	Linde 124, SAW	EMA[2]	5.5E17	EMA[2]	---

Reference for Peach Bottom 2

Fluence, chemical composition, and UUSE data are from July 10, 1992, letter from G. J. Beck (PECo) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)"

PR_EDB has no UUSE or IUSE for both the surveillance plate and weld

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Peach Bottom 3	Lower Shell 6-146-1	C4689-2	7.2E17	-10°F	Plant specific	82.2	Table	0.12	0.56
EOL: 1/31/2008	Lower Shell 6-146-3	C4684-2	7.2E17	-20°F	Plant specific	90.4	Table	0.13	0.58
	Lower Shell 6-146-7	C4627-1	7.2E17	-20°F	Plant specific	82.4	Table	0.12	0.57
	Lower Int. Shell 6-139-10	C2773-2	7.2E17	10°F	Plant specific	103.95	Table	0.15	0.49
	Lower Int. Shell 6-139-11	C2775-1	7.2E17	10°F	Plant specific	86.8	Table	0.13	0.46
	Lower Int. Shell 6-139-12	C3103-1	7.2E17	10°F	Plant specific	100	Table	0.14	0.60
	Int. Shell 6-146-5	C4608-1	7.2E17	10°F	Plant specific	82	Table	0.12	0.55
	Int. Shell 6-146-4	C4689-1	7.2E17	10°F	Plant specific	82.2	Table	0.12	0.56
	Int. Shell 6-146-2	C4654-1	7.2E17	10°F	Plant specific	73.5	Table	0.11	0.55
	Lower to Lower Int. Shell Circ. Weld (DE)	3P4000	7.2E17	-50°F	Plant specific	27	Table	0.02	0.96
	Int. to Lower Int. Shell Circ. Weld (EF)	1P4217	7.2E17	-50°F	Plant specific	147.2	Table	0.11	0.96
	Axial Welds D1/3, E1/3, F1/3	37C065	7.2E17	-45°F	generic	109.25	Table	0.21	0.21

Reference for Peach Bottom 3

Fluence, chemical composition, and IRT data are from July 10, 1992, letter from G. J. Beck (PECo) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)"

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Peach Bottom 3 EOL: 1/31/2008	Lower Shell 6-146-1	C4689-2	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Lower Shell 6-146-3	C4684-2	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Lower Shell 6-146-7	C4627-1	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Lower Int. Shell 6-139-10	C2773-2	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Lower Int. Shell 6-139-11	C2775-1	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Lower Int. Shell 6-139-12	C3103-1	A 302B Mod.	79	5.0E17	89	65%
	Int. Shell 6-146-5	C4608-1	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Int. Shell 6-146-4	C4689-1	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Int. Shell 6-146-2	C4654-1	A 302B Mod.	EMA[2]	5.0E17	EMA[2]	---
	Lower to Lower Int. Shell Circ. Weld (DE)	3P4000	Linde 124, SAW	88	5.0E17	97	10°F data
	Int. to Lower Int. Shell Circ. Weld (EF)	1P4217	Linde 124, SAW	62	5.0E17	71	10°F data
	Axial Welds D1/3, E1/3, F1/3	37C065	Flux unknown, SAW	82	5.0E17	99	Direct

Reference for Peach Bottom 3

Fluence, chemical composition, and UUSE data are from July 10, 1992, letter from G. J. Beck (PECo) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)"

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Susque-hanna 1	Lower Int. Shell, 22-1	C0803-1	7.7E17	-10°F	Plant specific	58	Table	0.09	0.53
EOL: 7/17/2022	Lower Int. Shell, 22-2	C0776-1	7.7E17	6°F [1]	Plant specific	80.6	Table	0.12	0.48
	Lower Int. Shell, 22-3	C2433-1	7.7E17	18°F [1]	Plant specific	65.3	Table	0.10	0.63
	Lower Shell 21-1	B5083-1	7.7E17	-8°F [1]	Plant specific	94.6	Table	0.14	0.48
	Lower Shell 21-2	C0770-2	7.7E17	-20°F	Plant specific	95.5	Table	0.14	0.50
	Lower Shell 21-3	C0814-2	7.7E17	-20°F	Plant specific	88.3	Table	0.13	0.51
	Weld	629616/ L320A27AG	7.7E17	-50°F	Plant specific	54	Table	0.04	0.99
	Weld	411L3071/ L311A27AF	7.7E17	-50°F	Plant specific	41	Table	0.03	0.93
	Weld	494K2351/ L307A27AD	7.7E17	-50°F	Plant specific	54	Table	0.04	1.10
	Weld	40150371/ B504B27AE	7.7E17	-80°F	Plant specific	41	Table	0.03	1.04
	Weld	402K9171/ K315A27AE	7.7E17	-50°F	Plant specific	41	Table	0.03	0.96
	Weld	402C4371/ C115A27A	7.7E17	-50°F	Plant specific	27	Table	0.02	0.92
	Weld	412P3611/ J417B27AF	7.7E17	-80°F	Plant specific	41	Table	0.03	0.93

Reference for Susquehanna 1

Fluence, chemical composition, and IRT data are from July 10, 1992, letter from H. W. Keiser (PP&L) to C. L. Miller (USNRC), subject: Response to Generic Letter 92-01

NOTE: There are no weld direction (axial or circumferential) data. All welds are shielded metal arc welds (SMAW).

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Susquehanna 1 EOL: 7/17/2022	Lower Int. Shell, 22-1	C0803-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Int. Shell, 22-2	C0776-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Int. Shell, 22-3	C2433-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Shell 21-1	B5083-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Shell 21-2	C0770-2	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Shell 21-3	C0814-2	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Weld	[illegible]	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	411[illegible] L311A27AF	[illegible]	EMA[2]	5.3E17	EMA[2]	---
	Weld	494K2351/ L307A27AD	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	40150371/ B504B27AE	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	402K9171/ K315A27AE	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	402C4371/ C115A27A	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	412P3611/ J417B27AF	SMAW	EMA[2]	5.3E17	EMA[2]	---

Reference for Susquehanna 1

Fluence, chemical composition, and UUSE data are from July 10, 1992, letter from H. W. Keiser (PP&L) to C. L. Miller (USNRC), subject: Response to Generic Letter 92-01

NOTE: There are no weld direction (axial or circumferential) data. All welds are shielded metal arc welds (SMAW).

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Susque-hanna 2	Lower Int. Shell, 22-1	C2421-3	7.7E17	-10°F	Plant specific	93	Table	0.13	0.68
EOL: 3/23/2024	Lower Int. Shell, 22-2	C2929-1	7.7E17	-20°F	Plant specific	92	Table	0.13	0.64
	Lower Int. Shell, 22-3	C2433-2	7.7E17	2°F [1]	Plant specific	65.3	Table	0.10	0.63
	Lower Shell 21-1	6C956-1-1	7.7E17	-20°F	Plant specific	73.5	Table	0.11	0.55
	Lower Shell 21-2	6C980-1-1	7.7E17	-20°F	Plant specific	65	Table	0.10	0.56
	Lower Shell 21-3	6C1053-1-1	7.7E17	10°F	Plant specific	65	Table	0.10	0.58
	Weld	629616/ L320A27AG	7.7E17	-50°F	Plant specific	54	Table	0.04	0.99
	Weld	624263/ E204A27A	7.7E17	-20°F	Plant specific	82	Table	0.06	0.89
	Weld	09W057/ C109A27A	7.7E17	-36°F [1]	Plant specific	41	Table	0.03	0.89
	Weld	494K2351/ L307A27AD	7.7E17	-66°F	Plant specific	51	Table	0.04	1.10
	Weld	411L3071/ L311A27AF	7.7E17	-50°F	Plant specific	41	Table	0.03	0.93
	Weld	402K9171/ K315A27AE	7.7E17	-50°F	Plant specific	41	Table	0.03	0.96
	Weld	401S0317/ B504B27AE	7.7E17	-80°F	Plant specific	41	Table	0.03	1.04
	Weld	412P3611/ J417B27AF	7.7E17	-80°F	Plant specific	41	Table	0.03	0.93
	Weld	402C4371/ C115A27A	7.7E17	-50°F	Plant specific	27	Table	0.02	0.92
	Weld	659W315/ F414B27AF	7.7E17	-70°F	Plant specific	54	Table	0.04	1.00

Reference for Susquehanna 2

Fluence, chemical composition, and IRT data are from July 10, 1992, letter from H. W. Keiser (PP&L) to C. L. Miller (USNRC), subject: Response to Generic Letter 92-01

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Susquehanna 2 EOL: 3/23/2024	Lower Int. Shell, 22-1	C2421-3	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Int. Shell, 22-2	C2929-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Int. Shell, 22-3	C2433-2	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Shell 21-1	6C956-1-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Shell 21-2	6C980-1-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Lower Shell 21-3	6C1053-1-1	A 533B-1	EMA[2]	5.3E17	EMA[2]	---
	Weld	629616/ L320A27AG	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	624263/ E204A27A	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	09W057/ C109A27A	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	494K2351/ L307A27AD	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	411L3071/ L311A27AF	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	402K9171/ K315A27AE	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	401S0317/ B504B27AE	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	412P3611/ J417B27AF	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	402C4371/ C115A27A	SMAW	EMA[2]	5.3E17	EMA[2]	---
	Weld	659W315/ F414B27AF	SMAW	EMA[2]	5.3E17	EMA[2]	---

Reference for Susquehanna 2

Fluence, chemical composition, and UUSE data are from July 10, 1992, letter from H. W. Keiser (PP&L) to C. L. Miller (USNRC), subject: Response to Generic Letter 92-01

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Pilgrim	Lower Shell G3109-1	C-2957-1	1.39E18	-10°F	Plant specific	65	Table	0.10	0.48
EOL: 6/8/2012	Lower Shell G3109-2	C-2957-2	1.39E18	-10°F	Plant specific	65	Table	0.10	0.47
	Lower Shell G3109-3	C-2973-1	1.39E18	-10°F	Plant specific	74.45	Table	0.11	0.63
	Lower Int. Shell G3108-1	C-2921-2	1.39E18	-10°F	Plant specific	100	Table	0.14	0.60
	Lower Int. Shell G3108-2	C-2945-1	1.39E18	-10°F	Plant specific	65.5	Table	0.10	0.65
	Lower Int. Shell G3108-3	C-2945-2	1.39E18	-10°F	Plant specific	65.6	Table	0.10	0.66
	Lower Int. Axial Welds 1-338A/C	27204 & 12008	1.31E18	0°F	Plant specific	173.2	Table	0.13	1.06
	Lower Int. to Upper Shell Circ. Weld 3-339B	13253	1.31E18	0°F	Plant specific	95	Table	0.07	0.72
	Lower Int. to Lower Shell Circ. Weld 1-344	21935	1.31E18	0°F	Plant specific	151.65	Table	0.13	0.71
	Lower Shell Axial Welds 2-338A/C	27204 & 12008	1.31E18	0°F	Plant specific	173.2	Table	0.13	1.06

Reference for Pilgrim

IRT data are from August 30, 1993 to NRC (Response to GL 92-01 RAI).

Plate Cu data are from Appendix 1 to TR-6052B-1 added on to the report at a later date.

Except for plate Cu data, Ni, Cu, P data are from "Pilgrim Nuclear Power Station Reactor Pressure Vessel Pressure Temperature Limits," Technical Report TR-6052B-1, Rev. 1, June 26, 1986

S data are from July 1, 1992, letter from R. A. Anderson (BE) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01 (There are no S data for the welds)

Fluence data are from April 16, 1991, letter from J. C. Tsacoyeanes (BE) to USNkC Document Control Desk, subject: Pilgrim RPV Pressure Temperature Limits

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Pilgrim EOL: 6/8/2012	Lower Shell G3109-1	C-2957-1	A 533B-1	67	9.9E17	76	65%
	Lower Shell G3109-2	C-2957-2	A 533B-1	70	9.9E17	79	65%
	Lower Shell G3109-3	C-2973-1	A 533B-1	64	9.9E17	72	65%
	Lower Int. Shell G3108-1	C-2921-2	A 533B-1	70	9.9E17	81	65%
	Lower Int. Shell G3108-2	C-2945-1	A 533B-1	72	9.9E17	80	65%
	Lower Int. Shell G3108-3	C-2945-2	A 533B-1	72	9.9E17	81	65%
	Lower Int. Axial Welds 1-338A/C	27204 & 12008	Linde 1092, SAW	63	9.3E17	75[3]	NRC Generic
	Lower Int. to Upper Shell Circ. Weld 3-339B	13253	Linde 1092, SAW	99	9.3E17	113	Surv. Weld
	Lower Int. to Lower Shell Circ. Weld 1-344	21935	Linde 1092, SAW	63	9.3E17	75[3]	NRC Generic
	Lower Shell Axial Welds 2-338A/C	27204 & 12008	Linde 1092, SAW	63	9.3E17	75[3]	NRC Generic

[3]Generic value for welds fabricated by Combustion Engineering using Linde 1092, 0091 and 124 and Arcos B-5 fluxes (Ref: Letter from S. Bloom, NRR, to T.L. Patterson, OPPD, dated December 3, 1993)

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE

Reference for Pilgrim

The UUSE data for the surv. weld is from August 30, 1993 letter to NRC (Response to GL 92-01 RAI).

UUSE, Ni, Cu, P data are from "Pilgrim Nuclear Power Station Reactor Pressure Vessel Pressure Temperature Limits," Technical Report TR-60528-1, Rev. 1, June 26, 1986

Fluence data are from April 16, 1991, letter from J. C. Tsacoyeanes (BE) to USNRC Document Control Desk, subject: Pilgrim RPV Pressure Temperature Limits

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Vermont Yankee	Location unknown 1-14	C3017-2	2.3E17	40°F	Plant specific	74.45	Table	0.11	0.63
EOL: 3/21/2012	Location unknown 1-15	C3116-2	2.3E17	30°F	Plant specific	101.5	Table	0.14	0.66
	Location unknown 1-16	C2653-3	2.3E17	30°F	Plant specific	90.7	Table	0.13	0.59
	Location unknown 1-17	C2640-1	2.3E17	30°F	Plant specific	83.15	Table	0.12	0.61
	Welds	SMAW	2.3E17	-70°F	Generic	41	Table	0.03	0.95

Reference for Vermont Yankee

Fluence datum is from July 3, 1992, letter from J. P. Pelletier (VYNPC) to USNRC Document Control Desk, subject: Vermont Yankee Response to Generic Letter 92-01 Regarding Reactor Vessel Structurel Integrity

Chemical composition and IRT data are from licensee's response to RAI (GL 92-01) dated September 24, 1993

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Vermont Yankee EOL: 3/21/2012	Location unknown 1-14	C3017-2	A 533B-1	73	1.7E17	89	65%
	Location unknown 1-15	C3116-2	A 533B-1	65	1.7E17	71	40°F data
	Location unknown 1-16	C2653-3	A 533B-1	51	1.7E17	56	40°F data
	Location unknown 1-17	C2640-1	A 533B-1	EMA[2]	1.7E17	EMA[2]	
	Welds	Unknown	E8018-G, SMAW	99	1.7E17	107	Surv. Weld

Reference for Vermont Yankee

Plate heat numbers and UUSE data are from September 24, 1993 letter to NRC (Response to GL 92-01 RAI); the weld UUSE of 107 ft-lb (Atta. 3) is considered by the staff to be better than 125 ft-lb (Atta. 4).

Fluence datum is from July 3, 1992, letter from J. P. Pelletier (VYNPC) to USNRC Document Control Desk, subject: Vermont Yankee Response to Generic Letter 92-01 Regarding Reactor Vessel Structural Integrity

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Millstone 1 EOL: 10/6/2010	Lower Shell G2001-1	C1359-1	1.29E18	6°F	Plant specific	146.15	Table	0.22	0.49
	Lower Shell G2001-3	B4928-1	1.29E18	10°F	Plant specific	155.4	Table	0.23	0.52
	Lower Shell G2001-5	C1140-2	1.29E18	22°F	Plant specific	143.8	Table	0.23	0.44
	Lower-int. Shell G2002-4	B5013-2	1.29E18	-4°F	Plant specific	140.7	Table	0.21	0.49
	Lower-int. Shell G2002-5	C1079-1	1.29E18	26°F	Plant specific	236.43	Calculated	0.19	0.51
	Lower-int. Shell G2002-6	C1140-1	1.29E18	20°F	Plant specific	135.5	Table	0.21	0.45
	Axial Welds 1-073A/C	W5214	1.29E18	-20°F	Plant specific	252	Table	0.21	1.20
	Axial Welds 2-073A/C	W5214	1.29E18	-20°F	Plant specific	252	Table	0.21	1.20
	Lower to Lower-int. Circ. Weld	348009	1.29E18	-50°F	Plant specific	200.78	Calculated	0.21	1.03

Reference for Millstone 1

Fluence, chemical composition, and IRT_{NDT} data are from July 6, 1992, letter from J. F. Opeka (NNECo) to USNRC Document Control Desk, subject: Haddam Neck Plant; Millstone Power Station, Units 1, 2, and 3: Reactor Vessel Structural Integrity, 10CFR50.54(f), (Generic Letter 92-01, Revision 1)

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Millstone 1 EOL: 10/6/2010	Lower Shell G2001-1	C1359-1	A 302B	55	9.0E17	67	65%
	Lower Shell G2001-3	B4928-1	A 302B	55	9.0E17	67	65%
	Lower Shell G2001-5	C1140-2	A 302B	61	9.0E17	75	65%
	Lower-int. Shell G2002-4	B5013-2	A 302B	60	9.0E17	72	65%
	Lower-int. Shell G2002-5	C1079-1	A 302B	51	9.0E17	65	65%
	Lower-int. Shell G2002-6	C1140-1	A 302B	57	9.0E17	68	65%
	Axial Welds 1-073A/C	W5214	Linde 1092, SAW	90	9.0E17	112	Sister plant
	Axial Welds 2-073A/C	W5214	Linde 1092, SAW	90	9.0E17	112	Sister plant
	Lower to Lower-int. Circ. Weld 3-073	348009	Linde 1092, SAW	73	9.0E17	98	Surv. Weld

Reference for Millstone 1

The UUSE data for plate G2002-5 was determined by the staff based on data reported in October 15, 1993 letter to NRC (Response to GL 92-01 RAI).

Fluence, chemical composition, and UUSE data are from July 6, 1992, letter from J. F. Opeka (NNECo) to USNRC Document Control Desk, subject: Haddam Neck Plant; Millstone Power Station, Units 1, 2, and 3: Reactor Vessel Structural Integrity, 10CFR50.54(f), (Generic Letter 92-01, Revision 1)

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Oyster Creek EOL: 12/15/2004	Lower Shell G-307-1	T1937-2	3.62E18	30°F	Plant specific	79.45	Table	0.17	0.11
	Lower Shell G-308-1	T1937-1	3.62E18	21°F	Plant specific	79.45	Table	0.17	0.11
	Lower Shell G-307-5	P2076-2	3.62E18	3°F	Plant specific	173.85	Table	0.27	0.53
	Lower-int. Shell G-8-6	P2150-1	3.62E18	31°F	Plant specific	138.2	Table	0.20	0.51
	Lower-int. Shell G-8-7	P2161-1	3.62E18	17°F	Plant specific	139.4	Table	0.21	0.48
	Lower-int. Shell G-8-8	P2136-2	3.62E18	8°F	Plant specific	120.7	Table	0.18	0.46
	Lower Shell Axial Welds 2-564A/C	86054B	3.62E18	-50°F	Plant specific	168	Table	0.35	0.20
	Lower-int. Shell Axial Welds 2-564D/F	86054B	3.62E18	-8°F [1]	plant specific	168	Table	0.35	0.20
	Lower to Lower-int. Shell Circ. Weld 3-564	1248	3.62E18	-50°F	Plant specific	112	Table	0.22	0.20

References for Oyster Creek

The Ni value for weld 1248 is from September 7, 1993 letter to NRC (Response to GL 92-01 RAI).

Cu, and fluence data are from June 16, 1992, letter from A. W. Dromerick (USNRC) to Distribution (USNRC), subject: Summary of Meeting regarding Reactor Vessel Upper Shelf Energy Analysis for the Oyster Creek Nuclear Generating Plant

Ni, P, S; and IRT data are from January 11, 1991, letter from J. J. Barton (GPUN) to USNRC Document Control Desk, subject: Oyster Creek Nuclear Generating Station, Technical Specification Change Request No. 194. Margin values for plates must be increased to account for σ calculated by the licensee.

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Oyster Creek EOL: 12/ 15/2004	Lower Shell G-307-1	T1937-2	A 302B-1	53	2.36E18	64	65%
	Lower Shell G-308-1	T1937-1	A 302B-1	EMA[2]	2.36E18	60	65%
	Lower Shell G-307-5	P2076-2	A 302B-1	EMA[2]	2.36E18	62	65%
	Lower-int. Shell G-8-6	P2150-1	A 302B-1	EMA[2]	2.36E18	53	65%
	Lower-int. Shell G-8-7	P2161-1	A 302B-1	EMA[2]	2.36E18	51	65%
	Lower-int. Shell G-8-8	P2136-2	A 302B-1	53	2.36E18	65	65%
	Lower Shell Axial Welds 2-564A/C	860548	Arcos B-5, SAW	EMA[2]	2.36E18	EMA[2]	
	Lower-int. Shell Axial Welds 2-564D/F	860548	Arcos B-5, SAW	EMA[2]	2.36E18	EMA[2]	
	Lower to Lower-int. Shell Circ. Weld 3-564	1248	Arcos B-5, SAW	EMA[2]	2.36E18	EMA[2]	

References for Oyster Creek

UUSE, Cu, and fluence data are from June 16, 1992, letter from A. W. Dromerick (USNRC) to Distribution (USNRC), subject: Summary of Meeting regarding Reactor Vessel Upper Shelf Energy Analysis for the Oyster Creek Nuclear Generating Plant

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Brunswick 1	Lower Shell	C4500-2	1.95E18	10°F	Plant Specific	106.7	Table	0.15	0.54
EOL: 9/8/2016	Lower Shell	C4550-2	1.95E18	10°F [1]	Plant Specific	74	Table	0.11	0.60
	Lower Int. Shell	C4489-1	1.95E18	10°F [1]	Plant Specific	83	Table	0.12	0.60
	Lower Int. Shell	C4500-2	1.95E18	10°F [1]	Plant Specific	82.4	Table	0.12	0.57
	Nozzle N16A	Q2Q1VW	1.60E17	40°F	Plant Specific	123	Table	0.16	0.82
	Nozzle N16B	Q2Q1VW	1.60E17	40°F	Plant Specific	123	Table	0.16	0.82
	Axial Welds	S3986	1.95E18	10°F	Plant Specific	68	Table	0.05	0.96
	Circ. Weld	3P4000	1.95E18	10°F	Plant Specific	27	Table	0.02	0.90

REFERENCES FOR BRUNSWICK 1:

Fluence and chemical composition data for N16A and N16B are from July 7, 1993 letter to NRC (Response to GL 92-01 RAI).

Fluence is from February 15, 1990, letter from N.B. Le (USNRC) to L.W. Ewy (CP&L), Subject: Issuance of Amendment 140 to DPR-71 and Amendment 172 to DPR-62.

Chemical composition and IRT data are from NEDC-24161, "Brunswick Steam Electric Station, Unit 1, Information on Reactor Vessel Surveillance Program.

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Brunswick 1 EOL: 9/8/2016	Lower Shell	C4500-2	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Lower Shell	C4550-2	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Lower Int. Shell	C4489-1	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Lower Int. Shell	C4500-2	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Nozzle N16A	Q201VW	A 508-2	EMA[2]	1.16E17	EMA[2]	
	Nozzle N16B	Q201VW	A 508-2	EMA[2]	1.16E17	EMA[2]	
	Axial Welds	S3986	Linde 124, SAW	EMA[2]	1.42E18	EMA[2]	
	Circ. Weld	3P4000	Linde 124, SAW	EMA[2]	1.42E18	EMA[2]	

REFERENCES FOR BRUNSWICK 1:

Fluence and chemical composition data for N16A and N16B are from July 7, 1993 letter to NRC (Response to GL 92-01 RAI).

Fluence for all other materials is from February 15, 1990, letter from N. B. Le (USNRC) to L. W. Eury (CP&L), subject: Issuance of Amendment 140 to DPR-71 and Amendment 172 to DPR-62.

Chemical composition data for all other materials are from NEDC-24161, "Brunswick Steam Electric Station, Unit 1, Information on Reactor Vessel Surveillance Program.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Brunswick 2 EOL: 12/27/ 2014	Lower Shell	C4535-2	1.95E18	10°F [1]	Plant Specific	82.6	Table	0.12	0.58
	Lower Shell	C4550-1	1.95E18	10°F [1]	Plant Specific	74	Table	0.11	0.60
	Lower Int. Shell	C4487-1	1.95E18	10°F [1]	Plant Specific	82.2	Table	0.12	0.56
	Lower Int. Shell	B8496-1	1.95E18	10°F [1]	Plant Specific	139.8	Table	0.19	0.58
	Nozzle N16A	Q2Q1VW	1.60E17	40°F [1]	Plant Specific	123	Table	0.16	0.82
	Nozzle N16B	Q2Q1VW	1.60E17	40°F [1]	Plant Specific	123	Table	0.16	0.82
	Axial Welds	S3986	1.95E18	10°F	Plant Specific	68	Table	0.05	0.96
	Circ. Weld	1P4218	1.95E18	10°F	Plant Specific	82	Table	0.06	0.87

REFERENCES FOR BRUNSWICK 2:

Fluence and chemical composition data for N16A and N16B are from July 7, 1993 letter to NRC (Response to GL 92-01 RAI).

Fluence is from February 15, 1990, letter from N.B. Le (USNRC) to L.W. Ewy (CP&L), Subject: Issuance of Amendment 140 to DPR-71 and Amendment 173 to DPR-62.

Chemical composition and IRT data are from NEDC-24157, "Brunswick Steam Electric Station, Unit 2, Information on Reactor Vessel Surveillance Program.

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL/EFPY	1/4T Neutron Fluence at EOL/EFPY	Unirrad. USE	Method of Determin. Unirrad. USE
Brunswick 2 EOL: 12/27/ 2014	Lower Shell	C4535-2	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Lower Shell	C4550-1	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Lower Int. Shell	C4487-1	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Lower Int. Shell	B8496-1	A 533B-1	EMA[2]	1.42E18	EMA[2]	
	Nozzle N16A	Q2Q1VW	A 508-2	EMA[2]	1.16E17	EMA[2]	
	Nozzle N16B	Q2Q1VW	A 508-2	EMA[2]	1.16E17	EMA[2]	
	Axial Welds	S3986	Linde 124, SAW	EMA[2]	1.42E18	EMA[2]	
	Circ. Weld	1P4218	Linde 124, SAW	EMA[2]	1.42E18	EMA[2]	

REFERENCES FOR BRUNSWICK 2:

Fluence and chemical composition data for N16A and N16B are from July 7, 1993 letter to NRC (Response to GL 92-01 RAI).

Fluence for all other materials is from February 15, 1990, letter from N. B. Le (USNRC) to L. W. Eury (CP&L), subject: Issuance of Amendment 140 to DPR-71 and Amendment 172 to DPR-62.

Chemical composition data for all other material are from NEDC-24157, "Brunswick Steam Electric Station, Unit 2, Information on Reactor Vessel Surveillance Program.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Hatch 1 EOL: 8/6/2014	Lower Int. Shell G-4803-7	C4337-1	1.8E18	10°F	Plant specific	127.5	Table	0.17	0.62
	Lower Int. Shell G-4804-1	C3985-2	1.8E18	10°F [1]	Plant specific	90.4	Table	0.13	0.58
	Lower Int. Shell G-4804-2	C4114-2	1.8E18	10°F [1]	Plant specific	93.5	Table	0.13	0.70
	Lower Shell G-4805-1	C4112-1	1.8E18	10°F [1]	Plant specific	92	Table	0.13	0.64
	Lower Shell G-4805-2	C4112-2	1.8E18	10°F [1]	Plant specific	92	Table	0.13	0.64
	Lower Shell G-4805-3	C4149-3	1.8E18	10°F [1]	Plant specific	98.65	Table	0.14	0.57
	Lower Int. Axial Welds 1-308G/J	IP2815	1.8E18	-10°F	Plant specific	209.6	Table	0.27	0.76
	Lower Int. Axial Welds 1-308G/J	IP2809	1.8E18	-10°F [1]	Plant specific	211.8	Table	0.28	0.76
	Lower Shell Axial Welds 1-307A/C	13253	1.8E18	-10°F [1]	Plant specific	206.4	Table	0.27	0.74
	Lower Int./ Lower Shell Circ. Weld 1-313	90099	1.8E18	-10°F [1]	Plant specific	207	Table	0.17	1.00
	Lower Int./ Lower Shell Circ. Weld 1-313	33A277	1.8E18	-10°F [1]	Plant specific	236	Table	0.23	1.00

References for Hatch 1

Fluence, IRT, and chemical composition data are from July 2, 1992, letter from J. T. Beckham, Jr. to USNRC Document Control Desk, subject: Response to NRC Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity

Weld flux data are from November 22, 1988, letter from W. G. Hairston (GPCo) to USNRC Document Control Desk, subject: Response to Generic Letter 88-11

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Hatch 1 EOL: 8/6/2014	Lower Int. Shell G-4803-7	C4337-1	A 533B-1	EMA[2]	1.3E18	EMA[2]	---
	Lower Int. Shell G-4804-1	C3985-2	A 533B-1	EMA[2]	1.3E18	EMA[2]	---
	Lower Int. Shell G-4804-2	C4114-2	A 533B-1	R6	1.3E18	90	65%
	Lower Shell G-4805-1	C4112-1	A 533B-1	EMA[2]	1.3E18	EMA[2]	---
	Lower Shell G-4805-2	C4112-2	A 533B-1	EMA[2]	1.3E18	EMA[2]	---
	Lower Shell G-4805-3	C4149-3	A 533B-1	EMA[2]	1.3E18	EMA[2]	---
	Lower Int. Axial Welds 1-308G/J	IP2815	Linde 1092, SAW	EMA[2]	1.3E18	EMA[2]	---
	Lower Int. Axial Welds 1-308G/J	IP2809	Linde 1092, SAW	EMA[2]	1.3E18	EMA[2]	---
	Lower Shell Axial Welds 1-307A/C	13253	Linde 1092, SAW	EMA[2]	1.3E18	EMA[2]	---
	Lower Int./ Lower Shell Circ. Weld 1-313	90099	Linde 0091, SAW	EMA[2]	1.3E18	EMA[2]	---
	Lower Int./ Lower Shell Circ. Weld 1-313	33A277	Linde 0091, SAW	EMA[2]	1.3E18	EMA[2]	---

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
References for Hatch 1 Fluence and chemical composition data are from July 2, 1992, letter from J. T. Beckham, Jr. to USNRC Document Control Desk, subject: Response to NRC Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity Plate UUSE datum is from the surveillance capsule report (NEDC-30997)							

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Hatch 2 EOL: 6/13/2018	Lower Shell G6603-1	C8553-2	1.0E18	-20°F	Plant specific	51	Table	0.08	0.58
	Lower Shell G6603-2	C8553-1	1.0E18	24°F [1]	Plant specific	51	Table	0.08	0.58
	Lower Shell G6603-3	C8571-1	1.0E18	0°F [1]	Plant specific	51	Table	0.08	0.53
	Lower Int. Shell G6602-1	C8554-2	1.0E18	-10°F [1]	Plant specific	51	Table	0.08	0.58
	Lower Int. Shell G6602-2	C8554-1	1.0E18	-20°F	Plant specific	51	Table	0.08	0.57
	Lower Int. Shell G6601-4	C8579-2	1.0E18	-4°F [1]	Plant specific	72.8	Table	0.11	0.48
	Lower Shell Axial Welds 101-842	10137	1.0E18	-50°F	Plant specific	154.5	Table	0.23	0.50
	Lower Int. Shell Axial Welds 101-834	51874	1.0E18	-50°F	Plant specific	138	Table	0.18	0.50
	Lower/ Lower Int. shell Circ. Weld 301-871	4P6052	1.0E18	-50°F	Plant specific	35.45	Table	0.07	0.03

Reference for Hatch 2

Fluence, IRT, and chemical composition data are from July 2, 1992, letter from J. T. Beckham, Jr. to USNRC Document Control Desk, subject: Response to NRC Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity

[1]Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Hatch 2 EOL: 6/13/2018	Lower Shell G6603-1	C8553-2	A 533B-1	86	6.8E17	95	65%
	Lower Shell G6603-2	C8553-1	A 533B-1	77	6.8E17	85	65%
	Lower Shell G6603-3	C8571-1	A 533B-1	64	6.8E17	71	65%
	Lower Int. Shell G6602-1	C8554-2	A 533B-1	84	7.2E17	93	65%
	Lower Int. Shell G6602-2	C8554-1	A 533B-1	81	7.2E17	90	65%
	Lower Int. Shell G6601-4	C8579-2	A 533B-1	63	7.2E17	70	65%
	Lower Shell Axial Welds 101-842	10137	Linde 0091, SAW	87	6.8E17	108	10°F data
	Lower Int. Shell Axial Welds 101-834	51874	Linde 0091, SAW	74	7.2E17	89	10°F data
	Lower/ Lower Int. shell Circ. Weld 301-871	4P6052	Linde 0091, SAW	112	7.2E17	126	10°F data

Reference for Hatch 2

Fluence, UUSE, and chemical composition data are from July 2, 1992, letter from J. T. Beckham, Jr. to USNRC Document Control Desk, subject: Response to NRC Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity

Weld UUSEs are at 10°F; therefore, they are actually CVN values.

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Browns Ferry 1 EOL: 12/ 20/2013	Lower Shell	A10C9-1	1.24E18	-10°F	Plant specific	95.5	Table	0.14	0.50
	Lower Shell	B5864-1	1.24E18	-20°F	Plant specific	101.2	Table	0.15	0.44
	Lower Shell	A0999-1	1.24E18	-20°F	Plant specific	100	Table	0.14	0.60
	Int. Shell	C2868-2	1.24E18	0°F	Plant specific	58	Table	0.09	0.52
	Int. Shell	C2884-2	1.24E18	0°F	Plant specific	81.4	Table	0.12	0.52
	Int. Shell	C2753-1	1.24E18	-20°F [1]	Plant specific	51	Table	0.08	0.50
	Circ. Weld WF-154	406L44	1.24E18	20°F	Plant specific	196.7	Table	0.31	0.59
	Axial Welds ES	Not available	1.24E18	10°F	Plant specific	142.5	Table	0.25	0.35

Reference for Browns Ferry 1

Fluence, IRT, and chemical composition data are from July 7, 1992, letter from R. H. Shell (TVA) to USNRC Document Control Desk, subject: Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN)--Response to NRC Generic Letter 92-01 (Reactor Vessel Structural Integrity)

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Browns Ferry 1	Lower Shell	A1009-1	A 302B	EMA[2]	8.6E17	EMA[2]	
EOL: 12/ 20/2013	Lower Shell	B5864-1	A 302B	EMA[2]	8.6E17	EMA[2]	
	Lower Shell	A0999-1	A 302B	EMA[2]	8.6E17	EMA[2]	
	Int. Shell	C2868-2	A 302B	84	8.6E17	94	65%
	Int. Shell	C2884-2	A 302B	68	8.6E17	77	65%
	Int. Shell	C2753-1	A 302B	EMA[2]	8.6E17	EMA[2]	
	Circ. Weld WF-154	406L44	Linde 80, SAW	EMA[2]	8.6E17	EMA[2]	
	Axial Welds ES	Not available	Linde 124, ESW	EMA[2]	8.6E17	EMA[2]	

Reference for Browns Ferry 1

Fluence, weld UUSE, and chemical composition data are from July 7, 1992, letter from R. H. Shell (TVA) to USNRC Document Control Desk, subject: Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN)--Response to NRC Generic Letter 92-01 (Reactor Vessel Structural Integrity)

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Browns Ferry 2 EOL: 6/28/2014	Lower Shell	C2467-2	1.06E18	-20°F	Plant specific	112.4	Table	0.16	0.52
	Lower Shell	C2463-1	1.06E18	-20°F	Plant specific	116.8	Table	0.17	0.48
	Lower Shell	C2460-1	1.06E18	-20°F	Plant specific	88.3	Table	0.13	0.51
	Int. Shell	A0981-1	1.06E18	-10°F	Plant specific	97.75	Table	0.14	0.55
	Int. Shell	C2467-1	1.06E18	-10°F	Plant specific	112.4	Table	0.16	0.52
	Int. Shell	C2849-1	1.06E18	-10°F	Plant specific	73	Table	0.11	0.50
	Circ. Weld	D55733	1.06E18	-40°F	Plant specific	116.75	Table	0.09	0.65
	Axial Welds ES	Not available	1.06E18	10°F	Plant specific	142.5	Table	0.25	0.35

Reference for Browns Ferry 2

Fluence, IRT, and chemical composition data are from July 7, 1992, letter from R. H. Shell (TVA) to USNRC Document Control Desk, subject: Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN)--Response to NRC Generic Letter 92-01 (Reactor Vessel Structural Integrity)

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Browns Ferry 2 EOL: 6/28/2014	Lower Shell	C2461-2	A 302B	EMA[2]	7.3E17	EMA[2]	
	Lower Shell	C2463-1	A 302B	EMA[2]	7.3E17	EMA[2]	
	Lower Shell	C2460-1	A 302B	EMA[2]	7.3E17	EMA[2]	
	Int. Shell	A0981-1	A 302B	81	7.3E17	92	65%
	Int. Shell	C2467-1	A 302B	EMA[2]	7.3E17	EMA[2]	
	Int. Shell	C2849-1	A 302B	EMA[2]	7.3E17	EMA[2]	
	Circ. Weld	D55733	YF-200, SAW	127	7.3E17	145	Direct
	Axial Welds ES	Not available	Linde 124, ESW	EMA[2]	7.3E17	EMA[2]	

Reference for Browns Ferry 2

Fluence, UUSE, and chemical composition data are from July 7, 1992, letter from R. H. Shell (TVA) to USNRC Document Control Desk, subject: Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN)--Response to NRC Generic Letter 92-01 (Reactor Vessel Structural Integrity)

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Browns Ferry 3 EOL: 7/2/2016	Lower Shell	C3213-1	1.04E18	-30°F	Plant specific	90.4	Table	0.13	0.58
	Lower Shell	C3222-2	1.04E18	-20°F	Plant specific	105.6	Table	0.15	0.52
	Lower Shell	C3217-2	1.04E18	-50°F	Plant specific	101.5	Table	0.14	0.66
	Int. Shell	C3188-2	1.04E18	-30°F	Plant specific	65	Table	0.10	0.51
	Int. Shell	C3201-2	1.04E18	-30°F	Plant specific	91	Table	0.13	0.60
	Int. Shell	B7267-1	1.04E18	-20°F	Plant specific	88.3	Table	0.13	0.51
	Circ. Weld	D55733/ D51852	1.04E18	-40°F	Plant specific	117.1	Table	0.09	0.66
	Axial Welds ES	Not available	1.04E18	10°F	Plant specific	142.5	Table	0.25	0.35

Reference for Browns Ferry 3

Fluence, IRT, and chemical composition data are from July 7, 1992, letter from R. H. Shell (TVA) to USNRC Document Control Desk, subject: Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN)--Response to NRC Generic Letter 92-01 (Reactor Vessel Structural Integrity)

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Browns Ferry 3 EOL: 7/2/2016	Lower Shell	C3213-1	A 302B	EMA[2]	7.2E17	EMA[2]	
	Lower Shell	C3222-2	A 302B	EMA[2]	7.2E17	EMA[2]	
	Lower Shell	C3217-2	A 302B	EMA[2]	7.2E17	EMA[2]	
	Int. Shell	C3188-2	A 302B	92	7.2E17	103	65%
	Int. Shell	C3201-2	A 302B	EMA[2]	7.2E17	EMA[2]	
	Int. Shell	B7267-1	A 302B	EMA[2]	7.2E17	EMA[2]	
	Circ. Weld	D55733/ D51852	YF-200, SAW	171	7.2E17	195	Direct
	Axial Welds ES	Not available	Linde 124, ESW	EMA[2]	7.2E17	EMA[2]	

Reference for Browns Ferry 3

Fluence, UUSE, and chemical composition data are from July 7, 1992, letter from R. H. Shell (TVA) to USNRC Document Control Desk, subject: Browns Ferry Nuclear Plant (BFN), Sequoyah Nuclear Plant (SQN), and Watts Bar Nuclear Plant (WBN)--Response to NRC Generic Letter 92-01 (Reactor Vessel Structural Integrity)

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Big Rock Point	No location identification S-5503-1	19246-1	5.011E19	30°F	Plant specific	80.712	Calculated	0.10	0.18
EOL: 5/31/2000	No location identification S-5503-2	19246-2	5.011E19	30°F	Plant specific	80.712	Calculated	0.10	0.18
	No location identification S-5503-3	19246-3	5.011E19	30°F	Plant specific	80.712	Calculated	0.10	0.18
	No location identification S-5503-4	19246-4	5.011E19	30°F	Plant specific	80.712	Calculated	0.10	0.18
	Axial Welds	No data	5.011E19	-56°F	Generic	140.68	Calculated	0.27	0.10
	Circ. Weld	No data	5.011E19	-56°F	Generic	---	---	No data	No data

References for Big Rock Point

The fluence and UUSE data are from April 27, 1993 letter to NRC (Response to GL 92-01 RAI).

Chemical composition data are from June 12, 1978 letter from W. S. Skibitsky (CPCo) to D. L. Ziemann (USNRC), subject: Big Rock Point Plant--Reactor Surveillance Program

IRT and chemical composition data are from January 10, 1990, letter from K. W. Berry (CPCo) to USNRC Document Control Desk, subject: Big Rock Point Plant Technical Specification Change Request--Reactor Temperature Limits

Plate identification is from page 3 of July 29, 1977, letter from D. A. Bixel (USNRC) to Director of Nuclear Regulation (USNRC), subject: Big Rock Point and Palisades Plants, Response to Letter Dated May 20, 1977--Reactor Vessel Surveillance

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Big Rock Point EOL: 5/31/2000	No location identification S-5503-1	19246-1	A 302B	57	6.088E19	82	Direct
	No location identification S-5503-2	19246-2	A 302B	57	6.088E19	82	Direct
	No location identification S-5503-3	19246-3	A 302B	57	6.088E19	82	Direct
	No location identification S-5503-4	19246-4	A 302B	57	6.088E19	82	Direct
	Axial Welds	No data	ARCOS B5 SAW	47	6.088E19	95	Surv. Weld
	Circ. Welds	No data	ARCOS B5 SAW	---	6.088E19	No data	---

References for Big Rock Point

The fluence and UUSE data are from April 27, 1993 letter to NRC (Response to GL 92-01 RAI)

Chemical composition data are from June 12, 1978 letter from W. S. Skibitsky (CPCo) to D. L. Ziemann (USNRC), subject: Big Rock Point Plant--Reactor Surveillance Program

Base metal UUSE and orientation, and weld UUSE are from C. Z. Serpan, Jr., and H. E. Watson, "Mechanical Property and Neutron Spectral Analysis of the Big Rock Point Reactor Pressure Vessel," Nuclear Engineering and Design, 11 (1970), pp. 393-415

Chemical composition and fluence data are from January 10, 1990, letter from K. W. Berry (CPCo) to USNRC Document Control Desk, subject: Big Rock Point Plant Technical Specification Change Request--Reactor Temperature Limits

Plate identification is from page 3 of July 29, 1977, letter from D. A. Bixel (USNRC) to Director of Nuclear Regulation (USNRC), subject: Big Rock Point and Palisades Plants, Response to Lotter Dated May 20, 1977--Reactor Vessel Surveillance

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Fermi 2	Lower Int. Shell G-3703-5	C4564-1	6.5E17	-12°F [1]	Plant specific	58	Table	0.09	0.55
EOL: 3/20/2025	Lower Int. Shell G-3705-2	C4574-2	6.5E17	-16°F [1]	Plant specific	65	Table	0.10	0.55
	Lower Int. Shell G-3705-3	C4568-2	6.5E17	-12°F [1]	Plant specific	83.15	Table	0.12	0.61
	Lower Int. Shell G-3705-1	B8614-1	6.5E17	-20°F	Plant specific	83.15	Table	0.12	0.61
	Lower Shell G-3706-1	C4540-2	6.5E17	-10°F	Plant specific	51	Table	0.08	0.62
	Lower Shell G-3706-2	C4560-1	6.5E17	-10°F	Plant specific	73.7	Table	0.11	0.57
	Lower Shell G-3706-3	C4554-1	6.5E17	-10°F	Plant specific	82.2	Table	0.12	0.56
	Lower Shell Axial Welds 2-307A/C	13253 and 12008	6.5E17	-44°F [1]	Plant specific	223.9	Table	0.26	0.87
	Lower Int. Shell Axial Welds 15-308A/D	33A277	6.5E17	-50°F	Plant specific	188.5	Table	0.32	0.50
	Lower/ Lower Int. Circ. Weld 1-313	10137	6.5E17	-50°F	Plant specific	236	Table	0.23	1.00

Reference for Fermi 2

Fluence, IRT, and chemical composition data are from June 30, 1992, letter from W. S. Orser (DE) to UNSRC Document Control Desk, subject: Detroit Edison Response to Generic Letter 92-01, Rev. 1

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Fermi 2 EOL: 3/20/2025	Lower Int. Shell G-3703-5	C4564-1	A 533B-1	68	4.5E17	74	65%
	Lower Int. Shell G-3705-2	C4574-2	A 533B-1	71	4.5E17	78	65%
	Lower Int. Shell G-3705-3	C4568-2	A 533B-1	70	4.5E17	77	65%
	Lower Int. Shell G-3705-1	B8614-1	A 533B-1	76	4.5E17	85	65%
	Lower Shell G-3706-1	C4540-2	A 533B-1	86	4.5E17	94	65%
	Lower Shell G-3706-2	C4560-1	A 533B-1	91	4.5E17	101	65%
	Lower Shell G-3706-3	C4554-1	A 533B-1	77	4.5E17	86	65%
	Lower Shell Axial Welds 2-307A/C	13253 and 12008	Linde 1092, SAW	60	4.5E17	75[3]	NRC Generic
	Lower Int. Shell Axial Welds 15-308A/D	33A277	Linde 124, SAW	65	4.5E17	88	10°F data
	Lower/ Lower Int. Circ. Weld 1-313	10137	Linde 0091, SAW	86	4.5E17	105	10°F data

Reference for Fermi 2

Fluence, UAISE, CVN, and chemical composition data are from June 30, 1992, letter from W. S. Orser (DE) to USNRC Document Control Desk, subject: Detroit Edison Response to Generic Letter 92-01, Rev. 1

[3]Generic value for welds fabricated by Combustion Engineering using Linde 1092, 0091 and 124 and Arcos B-5 fluxes (Ref: Letter from S. Bloom, NRR, to T.L. Patterson, OPPD, dated December 3, 1993)

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Monti-cello	Lower Int. Shell I-14	C2220-1	5.15E18	0°F	Plant specific	125.3	Table	0.17	0.58
EOL: 9/8/2010	Lower Int. Shell I-15	C2220-2	5.15E18	14°F [1]	Plant specific	125.3	Table	0.17	0.58
	Lower Shell I-16	A0946-1	5.15E18	0°F [1]	Plant specific	98.2	Table	0.14	0.56
	Lower Shell I-17	C2193-1	5.15E18	6°F [1]	Plant specific	118.5	Table	0.17	0.50
	Welds	SMAW	5.15E18	-66°F	generic	134.9	Table	0.10	0.99

Reference for Monticello

Fluence, IRT, and chemical composition data are from July 6, 1992, letter from T. M. Parker (NSP) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Reactor Vessel Structural Integrity

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Monti-cello EOL: 9/8/2010	Lower Int. Shell I-14	C2220-1	A 533B-1	EMA[2]	3.8E18	EMA[2]	---
	Lower Int. Shell I-15	C2220-2	A 533B-1	56	3.8E18	71	65%
	Lower Shell I-16	A0946-1	A 533B-1	EMA[2]	3.8E18	EMA[2]	---
	Lower Shell I-17	C2193-1	A 533B-1	EMA[2]	3.8E18	EMA[2]	---
	Welds	No data	SMAW	EMA[2]	3.8E18	EMA[2]	---

Reference for Monticello

Fluence, UUSE, and chemical compoulition data are from July 6, 1992, letter from T. M. Parker (NSP) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Reactor Vessel Structural Integrity

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Dresden 2	Lower Int. Shell	B4065-1	3.6E17	20°F [1]	Plant specific	155.4	Table	0.23	0.52
EOL: 1/10/2006	Lower Int. Shell	B5764-1	3.6E17	10°F [1]	Plant specific	65	Table	0.10	0.49
	Lower Int. Shell	B4030-1	3.6E17	6°F [1]	Plant specific	143	Table	0.20	0.55
	Lower Int. Shell	B4030-2	3.6E17	-2°F [1]	Plant specific	143	Table	0.20	0.55
	Lower Shell	A9128-2	3.6E17	10°F [1]	Plant specific	131	Table	0.20	0.45
	Lower Shell	B3990-2	3.6E17	12°F [1]	Plant specific	116.9	Table	0.18	0.42
	Lower Shell	A9128-1	3.6E17	10°F [1]	Plant specific	131	Table	0.20	0.45
	Lower Int. Shell Axial Welds	PQ1092C-2	3.6E17	40°F	Plant specific	93.4	Table	0.18	0.18
	Lower Int. Shell Axial Welds	1P0661	3.6E17	-38°F [1]	Plant specific	162.1	Table	0.19	0.63
	Lower Int. Shell Axial Welds	1P0815	3.6E17	-22°F [1]	Plant specific	122.2	Table	0.12	0.52
	Lower Shell Axial Welds	PQ1092C-2	3.6E17	40°F	Plant specific	93.4	Table	0.18	0.18
	Lower Shell Axial Welds	1P0815	3.6E17	-14°F [1]	Plant specific	159.2	Table	0.25	0.48
	Lower Int. to Lower Circ. Weld	71249	3.6E17	-10°F [1]	Plant specific	167.3	Table	0.21	0.62

Reference for Dresden 2

The IRT for electroslag welds (heat number PQ 1092C-2) is from September 24, 1993 letter to NRC (Response to GL 92-01 RAI).

Chemical composition, IRT, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Dresden 2 EOL: 1/10/2006	Lower Int. Shell	B4065-1	A 302B	EMA[2]	2.5E17	EMA[2]	
	Lower Int. Shell	B5764-1	A 302B	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell	B4030-1	A 302B	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell	B4030-2	A 302B	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell	A9128-2	A 302B	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell	B3990-2	A 302B	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell	A9128-1	A 302B	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell Axial Welds	PQ1092C-2	Flux unknown, ESW	EMA[2]	2.5E17	EMA[2]	
	Lower Int. Shell Axial Welds	1P0661	Flux unknown, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell Axial Welds	1P0815	Flux unknown, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell Axial Welds	PQ1092C-2	Flux unknown, ESW	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell Axial Welds	1P0815	Flux unknown, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. to Lower Circ. Weld	71249	Flux unknown, SAW	EMA[2]	2.5E17	EMA[2]	---

Reference for Dresden 2

Chemical composition, UUSE, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Dresden 3	Lower Int. Shell	A0257-1	5.1E17	10°F	Plant specific	151.05	Table	0.23	0.49
EOL: 1/12/2011	Lower Int. Shell	B5118-1	5.1E17	10°F	Plant specific	146.15	Table	0.22	0.49
	Lower Int. Shell	C1290-2	5.1E17	10°F	Plant specific	103.95	Table	0.15	0.49
	Lower Shell	C1256-2	5.1E17	-10°F	Plant specific	73	Table	0.11	0.50
	Lower Shell	B5159-2	5.1E17	0°F	Plant specific	153.15	Table	0.24	0.47
	Lower Shell	C1182-2	5.1E17	10°F	Plant specific	147.5	Table	0.22	0.50
	Lower Int. and Lower Shell Axial Welds	PQ1300	5.1E17	40°F	Plant specific	159.65	Table	0.30	0.33
	Lower Int. to Lower Shell Circ. Welds	299L44	5.1E17	0°F [1]	Plant specific	209.6	Table	0.29	0.72

Reference for Dresden 3

The IRT for electroslag welds (heat number PQ-1300) is from September 24, 1993 letter to NRC (Response to GL 92-01 RAI).

Chemical composition, IRT, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Dresden 3 EOL: 1/12/2011	Lower Int. Shell	A0237-1	A 302B Mod.	EMA[2]	3.5E17	EMA[2]	---
	Lower Int. Shell	B5118-1	A 302B Mod.	EMA[2]	3.5E17	EMA[2]	---
	Lower Int. Shell	C1290-2	A 302B Mod.	EMA[2]	3.5E17	EMA[2]	---
	Lower Shell	C1256-2	A 302B Mod.	EMA[2]	3.5E17	EMA[2]	---
	Lower Shell	B5159-2	A 302B Mod.	EMA[2]	3.5E17	EMA[2]	
	Lower Shell	C1182-2	A 302B Mod.	EMA[2]	3.5E17	EMA[2]	---
	Lower Int. and Lower Shell Axial Welds	PQ1300	Flux unknown, ESW	EMA[2]	3.5E17	EMA[2]	
	Lower Int. to Lower Shell Circ. Welds	299L44	Flux unknown, SAW	EMA[2]	3.5E17	EMA[2]	---

Reference for Dresden 3

Chemical composition, UUSE, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Quad Cities 1	Lower Int. Shell	C1505-2	3.5E17	-20°F	Plant specific	126.4	Table	0.18	0.52
EOL: 12/ 14/2012	Lower Int. Shell	C1498-2	3.5E17	-30°F	Plant specific	118.5	Table	0.17	0.50
	Lower Int. Shell	A0931-1	3.5E17	-30°F	Plant specific	95.95	Table	0.14	0.51
	Lower Shell	B5534-1	3.5E17	0°F [1]	Plant specific	179.65	Table	0.27	0.57
	Lower Shell	A0610-1	3.5E17	-20°F	Plant specific	143.3	Table	0.21	0.51
	Lower Shell	C1485-2	3.5E17	-30°F	Plant specific	152.5	Table	0.23	0.50
	Lower Int. and Lower Shell Axial Welds	PQ1300	3.5E17	40°F	Plant specific	159.65	Table	0.30	0.33
	Lower Int. and Lower Shell Axial Welds	PQ2563	3.5E17	40°F	Plant specific	272	Table	0.35	1.00
	Lower Int. to Lower Shell Circ. Weld	72445	3.5E17	-28°F [1]	Plant specific	122	Table	0.10	0.60
	Lower Int. to Lower Shell Circ. Weld	406L44	3.5E17	-10°F [1]	Plant specific	164	Table	0.22	0.58

Reference for Quad Cities 1

The IRT for electroslag welds (heat numbers PQ-1300 and PQ-2563) is from September 24, 1993 letter to NRC (Response to GL 92-01 RAI)

Chemical composition, IRT, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Quad Cities 1 EOL: 12/14/2012	Lower Int. Shell	C1505-2	A 302B Mod.	EMA[2]	2.4E17	EMA[2]	---
	Lower Int. Shell	C1498-2	A 302B Mod.	EMA[2]	2.4E17	EMA[2]	---
	Lower Int. Shell	A0931-1	A 302B Mod.	EMA[2]	2.4E17	EMA[2]	---
	Lower Shell	B5524-1	A 302B Mod.	EMA[2]	2.4E17	EMA[2]	
	Lower Shell	A0610-1	A 302B Mod.	EMA[2]	2.4E17	EMA[2]	---
	Lower Shell	C1485-2	A 302B Mod.	EMA[2]	2.4E17	EMA[2]	---
	Lower Int. and Lower Shell Axial Welds	PQ1300	Flux unknown, ESW	EMA[2]	2.4E17	EMA[2]	---
	Lower Int. and Lower Shell Axial Welds	PQ2563	Flux unknown, ESW	EMA[2]	2.4E17	EMA[2]	---
	Lower Int. to Lower Shell Circ. Weld	72445	Flux unknown, SAW	EMA[2]	2.4E17	EMA[2]	---
	Lower Int. to Lower Shell Circ. Weld	406L44	Flux unknown, SAW	EMA[2]	2.4E17	EMA[2]	---

Reference for Quad Cities 1

Chemical composition, UUSE, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Quad Cities 2	Lower Int. Shell	C2753-2	4.9E17	10°F	Plant specific	51	Table	0.08	0.50
EOL: 12/14/2012	Lower Int. Shell	C2868-1	4.9E17	10°F	Plant specific	51	Table	0.08	0.48
	Lower Int. Shell	C3307-2	4.9E17	10°F	Plant specific	82	Table	0.12	0.55
	Lower Shell	C1516-2	4.9E17	6°F [1]	Plant specific	108.2	Table	0.16	0.46
	Lower Shell	C1501-2	4.9E17	-10°F	Plant specific	123.55	Table	0.18	0.49
	Lower Shell	C1722-2	4.9E17	10°F [1]	Plant specific	97.3	Table	0.14	0.54
	Lower Int. and Lower Shell Axial Welds	PQ-1300	4.9E17	40°F	Plant specific	159.65	Table	0.30	0.33
	Lower Int. to Lower Shell Circ. Weld	S-3986	4.9E17	-42°F	Plant specific	68	Table	0.05	0.96

Reference for Quad Cities 2

The IRT for electroslag welds (heat number PQ-1300) is from September 24, 1993 letter to NRC (Response to GL 92-01 RAI).

Chemical composition, IRT, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Quad Cities 2 EOL: 12/14/2012	Lower Int. Shell	C2753-2	A 302B Mod.	EMA[2]	3.4E17	EMA[2]	---
	Lower Int. Shell	C2868-1	A 302B Mod.	EMA[2]	3.4E17	EMA[2]	---
	Lower Int. Shell	C3307-2	A 302B Mod.	EMA[2]	3.4E17	EMA[2]	---
	Lower Shell	C1516-2	A 302B Mod.	EMA[2]	3.4E17	EMA[2]	
	Lower Shell	C1501-2	A 302B Mod.	EMA[2]	3.4E17	EMA[2]	---
	Lower Shell	C1722-2	A 302B Mod.	EMA[2]	3.4E17	EMA[2]	---
	Lower Int. and Lower Shell Axial Welds	PQ-1300	Flux unknown, ESW	EMA[2]	3.4E17	EMA[2]	
	Lower Int. to Lower Shell Circ. Weld	S-3986	Flux unknown, SAW	EMA[2]	3.4E17	EMA[2]	

Reference for Quad Cities 2

Chemical composition, UUSE, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
LaSalle 1	Lower Shell G-5603-1	C5978-1	3.9E17	14°F [1]	Plant specific	73.8	Table	0.11	0.58
EOL: 5/17/2022	Lower Shell G-5603-2	C5978-2	3.9E17	23°F [1]	Plant specific	73.9	Table	0.11	0.59
	Lower Shell G-5603-3	C5979-1	3.9E17	10°F	Plant specific	83.9	Table	0.12	0.66
	Lower Int. Shell G-5604-1	C6345-1	3.9E17	-20°F	Plant specific	103.95	Table	0.15	0.49
	Lower Int. Shell G-5604-2	C6318-1	3.9E17	-20°F	Plant specific	81.2	Table	0.12	0.51
	Lower Int. Shell G-5604-3	C6345-2	3.9E17	-20°F	Plant specific	103.95	Table	0.15	0.51
	Middle Shell G-5605-1	A5333-1	3.9E17	-10°F	Plant specific	81.8	Table	0.12	0.54
	Middle Shell G-5605-2	B0078-1	3.9E17	-10°F	Plant specific	104.5	Table	0.15	0.50
	Middle Shell G-5605-3	C6123-2	3.9E17	-10°F	Plant specific	93	Table	0.13	0.68
	Middle Shell Axial Welds 3-308A/C	305424	3.9E17	-50°F	Plant specific	200.2	Table	0.30	0.64
	Middle Shell Axial Welds 3-308A/C	1P3571	3.9E17	-30°F [1]	Plant specific	241	Table	0.37	0.75
	Lower Int. Shell Axial Welds 4-308A/C	305414	3.9E17	-50°F	Plant specific	203.75	Table	0.33	0.59
	Lower Int. Shell Axial Welds 4-308A/C	12008	3.9E17	-50°F	Plant specific	208.7	Table	0.28	0.74
	Lower Shell Axial Welds 2-307A/C	21935	3.9E17	-50°F	Plant specific	177.2	Table	0.21	0.68

[1] Additional information required to confirm value.

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
	Lower Shell Axial Welds 2-307A/C	12008	3.9E17	-50°F	Plant specific	249	Table	0.27	1.00
	Middle to Lower Int. Shell Circ. Weld 6-308	6329637	3.9E17	-50°F	Plant specific	239	Table	0.24	1.00
	Lower to Lower Int. Shell Circ. Weld 1-313	AP6519	3.9E17	-60°F	Plant specific	83.8	Table	0.18	0.06

Reference for LaSalle 1

Chemical composition, IRT, and fluence data are from July 1, 1992, letter from N. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
LaSalle 1 EOL: 5/17/2022	Lower Shell G-5603-1	C5978-1	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell G-5603-2	C5978-2	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell G-5603-3	C5979-1	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell G-5604-1	C6345-1	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell G-5604-2	C6318-1	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell G-5604-3	C6345-2	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Middle Shell G-5605-1	A5333-1	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Middle Shell G-5605-2	B0078-1	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Middle Shell G-5605-3	C6123-2	A 533B-1	EMA[2]	2.5E17	EMA[2]	---
	Middle Shell Axial Welds 3-308A/C	305424	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---
	Middle Shell Axial Welds 3-308A/C	1P3571	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell Axial Welds 4-308A/C	305414	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower Int. Shell Axial Welds 4-308A/C	12008	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
	Lower Shell Axial Welds 2-307A/C	21935	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower Shell Axial Weldu 2-307A/C	12008	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---
	Middle to Lower Int. Shell Circ. Weld 6-308	6329637	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---
	Lower to Lower Int. Shell Circ. Weld 1-313	AP6519	Linde 1092, SAW	EMA[2]	2.5E17	EMA[2]	---

Reference for LaSalle 1

Chemical composition, UUSE, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
LaSalle 2	Lower Shell 21-1	C9425-2	4.2E17	30°F [1]	Plant specific	81.2	Table	0.12	0.51
EOL: 12/16/2023	Lower Shell 21-2	C9425-1	4.2E17	32°F [1]	Plant specific	81.2	Table	0.12	0.51
	Lower Shell 21-3	C9434-2	4.2E17	10°F	Plant specific	58	Table	0.09	0.51
	Lower Int. Shell, 22-1	C9481-1	4.2E17	10°F	Plant specific	73	Table	0.11	0.50
	Lower Int. Shell, 22-2	C9404-2	4.2E17	52°F [1]	Plant specific	44	Table	0.07	0.49
	Lower Int. Shell, 22-3	C9601-2	4.2E17	10°F	Plant specific	81	Table	0.12	0.50
	Lower Int. Shell Axial Welds BA,BB,BC	3P400	4.2E17	-50°F	Plant specific	27	Table	0.02	0.89
	Lower Shell Axial Welds BD,BE,BF	3P4966	4.2E17	-26°F [1]	Plant specific	41	Table	0.03	0.90
	Circ. Weld AB	5P6771	4.2E17	-34°F [1]	Plant specific	54	Table	0.04	0.95

Reference for LaSalle 2

Chemical composition, IRT, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[1]Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
LaSalle 2 EOL: 12/16/2023	Lower Shell 21-1	C9425-2	A 533B-1	EMA[2]	2.9E17	EMA[2]	---
	Lower Shell 21-2	C9425-1	A 533B-1	EMA[2]	2.9E17	EMA[2]	---
	Lower Shell 21-3	C9434-2	A 533B-1	EMA[2]	2.9E17	EMA[2]	---
	Lower Int. Shell, 22-1	C9481-1	A 533B-1	EMA[2]	2.9E17	EMA[2]	---
	Lower Int. Shell, 22-2	C9404-2	A 533B-1	EMA[2]	2.9E17	EMA[2]	---
	Lower Int. Shell, 22-3	C9601-2	A 533B-1	EMA[2]	2.9E17	EMA[2]	---
	Lower Int. Shell Axial Welds BA,BB,BC	3P400	Linde 124, SAW	EMA[2]	2.9E17	EMA[2]	---
	Lower Shell Axial Welds BD,BE,BF	3P4966	Linde 124, SAW	EMA[2]	2.9E17	EMA[2]	---
	Circ. Weld AB	5P6771	Linde 124, SAW	EMA[2]	2.9E17	EMA[2]	---

Reference for LaSalle 2

Chemical composition, UUSE, and fluence data are from July 1, 1992, letter from M. A. Jackson (CECo) to T. E. Murley (USNRC), subject: Dresden Station Units 2 and 3; Quad Cities Station Units 1 and 2; LaSalle County Station Units 1 and 2

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Duane Arnold	Lower Int. Shell 1-20	B0436-2	3.6E18	10°F	Plant specific	111	Table	0.15	0.64
EOL: 2/21/2014	Lower Int. Shell 1-21	B0673-1	3.6E18	10°F	Plant specific	110.25	Table	0.15	0.61
	Lower Shell 1-18	C6439-2	3.6E18	40°F [1]	Plant specific	58	Table	0.09	0.51
	Lower Shell 1-19	B0402-1	3.6E18	40°F	Plant specific	87.1	Table	0.13	0.47
	Circ. Weld	09L853	3.6E18	-50°F	Plant specific	41	Table	0.03	0.88
	Circ. Weld	07L669	3.6E18	-50°F	Plant specific	41	Table	0.03	1.02
	Circ. Weld	CTY538	3.6E18	-50°F	Plant specific	41	Table	0.03	0.83
	Axial Welds	43Z24521	3.6E18	-50°F	Plant specific	20	Table	0.01	0.98
	Axial Welds	43Z20471	3.6E18	-50°F	Plant specific	41	Table	0.03	0.91

Reference for Duane Arnold

Chemical composition, some UUSE, IRT, and fluence data are from July 6, 1992, letter from J. F. Franz, Jr. (IEL&P) to T. E. Murley (USNRC), subject: Response to NRC Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity"

Licensee's response to GL 92-01 does not indicate which welds are in which shell, so all weld RT_{pts} calculations will be made for the thinner (4.47 in.) wall thickness.

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Duane Arnold EOL: 2/21/2014	Lower Int. Shell, 1-20	B0436-2	A 533B-1	72	2.75E18	87	65%
	Lower Int. Shell, 1-21	B0673-1	A 533B-1	103	2.75E18	107	65%
	Lower Shell 1-18	C6439-2	A 533B-1	EMA[2]	2.66E18	EMA[2]	---
	Lower Shell 1-19	B0402-1	A 533B-1	EMA[2]	2.66E18	EMA[2]	---
	Circ. Weld	09L853	E8018, SMAW	EMA[2]	2.75E18	EMA[2]	---
	Circ. Weld	07L669	E8018, SMAW	EMA[2]	2.75E18	EMA[2]	---
	Circ. Weld	CTY538	E8018, SMAW	EMA[2]	2.75E18	EMA[2]	---
	Axial Welds	43224521	E8018, SMAW	EMA[2]	2.75E18	EMA[2]	---
	Axial Welds	43220471	E8018, SMAW	89	2.75E18	103	10°F data

Reference for Duane Arnold

Chemical composition, UUSE, and fluence data are from July 6, 1992, letter from J. F. Franz, Jr. (IEL&P) to T. E. Murley (USNRC), subject: Response to NRC Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity"

Licensee's response to GL 92-01 does not indicate which welds are in which shell, so all weld UUSE calculations will be made for the thinner (4.47 in.) wall thickness.

NOTE: It is not known which welds are in the lower shell. Therefore, I used the higher of the 1/4T EOL fluences, 2.75E18 n/cm^2, because it gave lower 1/4T EOL USEs.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Perry EOL: 3/18/2026	#2 Shell plates	C2557-1	5.4E18	10°F	Plant specific	37	Table	0.06	0.61
	#2 shell plates	B6270-1	5.4E18	-30°F	Plant specific	37	Table	0.06	0.63
	#2 shell plates	A1155-1	5.4E18	-10°F	Plant specific	37	Table	0.06	0.63
	Axial Welds	627260/ B322A27AE	5.4E18	-30°F	Plant specific	82	Table	0.06	1.08
	Axial Welds	626677/ C301A27AF	5.4E18	-20°F	Plant specific	20	Table	0.01	0.85
	Axial Welds	5P6214B/ 0331	5.4E18	-40°F	Plant specific	27	Table	0.02	0.82
	Axial Welds	624063/ D228A27A	5.4E18	-50°F	Plant specific	41	Table	0.03	1.00
	Axial Welds	627069/ C312A27A	5.4E18	-60°F	Plant specific	20	Table	0.01	0.94

References for Perry

Chemical composition and IRT are from the Perry 1 FSAR (Only #2 shell plates are in the neutron active zone)

Fluence datum is from September 14, 1990, letter from M. D. Lyster (CE) to USNRC Document Control Desk, subject: Technical Specification Change Request--Reactor Pressure-Temperature Limits

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Perry EOL: 3/18/2026	#2 Shell Plates	C2557-1	A 5338-1	64	3.74E18	84	Direct
	#2 Shell Plates	B6270-1	A 5338-1	80	3.74E18	94	Direct
	#2 Shell Plates	A1153-1	A 5338-1	99	3.74E18	114	Direct
	Axial Welds	627260/ B322A27AE	SMAW	88	3.74E18	104	Direct
	Axial Welds	626677/ C301A27AF	SMAW	77	3.74E18	90	Direct
	Axial Welds	5P62148/ 0331	Flux unknown, SAW	75	3.74E18	88	Direct
	Axial Welds	624063/ D22BA27A	SMAW	89	3.74E18	105	Direct
	Axial Welds	627069/ C312A27A	SMAW	95	3.74E18	112	Direct

References for Perry

Chemical composition and UUSE are from the Perry 1 FSAR

Fluence datum is from September 14, 1990, letter from M. D. Lyster (CE) to USNRC Document Control Desk, subject: Technical Specification Change Request--Reactor Pressure-Temperature Limits

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Clinton	Shell Course 2	C4363-2	6.9E18	-30°F	Plant specific	37	Table	0.06	0.62
EOL: 9/29/2026	Shell Course 2	C4380-2	6.9E18	-20°F	Plant specific	44	Table	0.07	0.63
	Shell Course 2	C4320-2	6.9E18	-20°F	Plant specific	31	Table	0.05	0.64
	Shell Course 1	A2758-1	6.5E17	-10°F	Plant specific	65.4	Table	0.10	0.64
	Shell Course 1	A2740-1	6.5E17	-30°F	Plant specific	74.9	Table	0.11	0.66
	Welds	3P4955/ 0951(S)	6.9E18	-50°F	Plant specific	41	Table	0.03	0.93
	Welds	3P4955/ 0951(T)	6.9E18	-60°F	Plant specific	41	Table	0.03	0.89
	Welds	3P4955/ 0342(S)	6.9E18	-20°F	Plant specific	27	Table	0.02	0.95
	Welds	3P4955/ 0342(T)	6.9E18	-20°F	Plant specific	41	Table	0.03	0.90
	Welds	3P4955/ 3478(S)	6.9E18	-60°F	Plant specific	27	Table	0.02	0.97
	Welds	3P4955/ 3478(T)	6.9E18	-60°F	Plant specific	41	Table	0.03	0.90
	Welds	5P6756	6.9E18	-60°F	Plant specific	108	Table	0.08	0.96
	Welds	76492	6.9E18	-30°F	Plant specific	135	Table	0.10	1.08

References for Clinton

Beltline radius is unsubstantiated datum from Clinton Project Manager.

Beltline thickness, fluence, Ni for plates A2758-1 and A2740-1 are from July 25, 1990, letter from J. B. Hickman (USNRC) to J. C. Tsao (USNRC), subject: Request for Additional Information on Clinton Response to Generic Letter 88-11

All other data are from Clinton USAR.

NOTE: There are only five beltline plates

NOTE: There is no differentiation between axial and circumferential welds, so they are all considered both axial and circumferential welds

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Clinton EOL: 9/29/2026	Shell Course 2	C4363-2	A 533B-1	88	4.93E18	105	Direct
	Shell Course 2	C4380-2	A 533B-1	86	4.93E18	102	Direct
	Shell Course 2	C4320-2	A 533B-1	78	4.93E18	93	Direct
	Shell Course 1	A2758-1	A 533B-1	56	4.65E17 [1]	67	50°F data
	Shell Course 1	A2740-1	A 533B-1	60	4.65E17 [1]	72	30°F data
	Welds	3P4955/ 0951(S)	Flux type unknown, SAW	78	4.93E18	93	Direct
	Welds	3P4955/ 0951(T)	Flux type unknown, SAW	67	4.93E18	80	Direct
	Welds	3P4955/ 0342(S)	Flux type unknown, SAW	76	4.93E18	90	Direct
	Welds	3P4955/ 0342(T)	Flux type unknown, SAW	80	4.93E18	95	Direct
	Welds	3P4955/ 3478(S)	Flux type unknown, SAW	93	4.93E18	111	Direct
	Welds	3P4955/ 3478(T)	Flux type unknown, SAW	87	4.93E18	104	Direct
	Welds	5P6756	Flux type unknown, flux core	103	4.93E18	126	Direct
	Welds	76492	Flux type unknown, SAW	77	4.93E18	97	Direct

References for Clinton

Fluence is from July 25, 1990, letter from J. B. Hickman (USNRC) to J. C. Tsao (USNRC), subject: Request for Additional Information on Clinton Response to Generic Letter 88-11

All other data are from Clinton USAR.

NOTE: There are only five beltline plates

[1]Additional information required to confirm value.

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{ndt}	Method of Determin. IRT_{ndt}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Cooper	Lower int. shell G-2801-7	C2407-1	1.5E18	-10°F	Plant specific	92.25	Table	0.13	0.65
EOL: 12/18/ 2014	Lower int. shell G-2802-1	C2331-2	1.5E18	10°F	Plant specific	125.3	Table	0.17	0.58
	Lower int. shell G-2802-2	C2307-2	1.5E18	-20°F	Plant specific	162.8	Table	0.21	0.73
	Lower shell G-2803-1	C2274-1	1.5E18	14°F [1]	Plant specific	153	Table	0.20	0.68
	Lower shell G-2803-2	C2307-1	1.5E18	0°F [1]	Plant specific	162.8	Table	0.21	0.73
	Lower shell G-2803-3	C2274-2	1.5E18	-8°F [1]	Plant specific	153	Table	0.20	0.68
	Lower int. shell axial welds 1-233A/C (T)	27204 & 12008	1.5E18	-50°F	Plant specific	215.65	Table	0.19	0.97
	Lower to lower-int. shell circ. weld 1-240	21935	1.5E18	-50°F	Plant specific	175.3	Table	0.20	0.69
	Lower shell axial welds 2-233A/C	12420	1.5E18	-50°F	Plant specific	234.5	Table	0.22	1.02

References:

Chemical composition (copper [Cu] and nickel [Ni]) for weld 2-233A/C, Ni for weld 1-240 and 1-233A/C are from February 25, 1993, letter from G. R. Horn (NPPD) to USNRC Document Control Desk, subject: Submittal of Reactor Vessel Surveillance Test Results.

IRT_{ndt} data for weld 1-233A/C is from G. R. Horne letter of February 25, 1993, cited above.

Other chemical composition, and other IRT_{ndt} data are from July 1, 1992, letter from G. R. Horn (NPPD) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1.

[1] Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Cooper EOL: 12/18/ 2014	Lower int. shell G-2801-7	C2407-1	A 533B-1	61	1.08E18	84	65%
	Lower int. shell G-2802-1	C2331-2	A 533B-1	61	1.08E18	72	65%
	Lower int. shell G-2802-2	C2307-2	A 533B-1	67	1.08E18	84	65%
	Lower shell G-2803-1	C2274-1	A 533B-1	60	1.08E18	73	65%
	Lower shell G-2803-2	C2307-1	A 533B-1	61	1.08E18	75	65%
	Lower shell G-2803-3	C2274-2	A 533B-1	60	1.08E18	72	65%
	Lower int. shell axial welds 1-233A/C	27204 & 12008	Linde 1092, SAW	85	1.08E18	112	Surv. Weld
	Lower to lower-int. shell circ. weld 1-240	21935	Linde 1092, SAW	EMA[2]	1.08E18	EMA[2]	- -
	Lower shell axial welds 2-233A/C	12420	Linde 1092, SAW	EMA[2]	1.08E18	EMA[2]	- -

References:

Chemical composition (copper [Cu] and nickel [Ni]) for weld 2-233A/C, Ni for weld 1-240 and 1-233A/C are from February 25, 1993, letter from G. R. Horn (NPPD) to USNRC Document Control Desk, subject: Submittal of Reactor Vessel Surveillance Test Results.

Fluence, the UUSE of the surv. weld, and other chemical composition data are from July 1, 1992, letter from G. R. Horn (NPPD) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1.

Plate UUSE data are from Table 7-1 of MDE-103-0986, which evaluated surveillance capsule 1.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL/EFPY	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Grand Gulf 1 EOL: 6/16/2022	#2 Shell Plates	C2593-2	3.14E18	-30°F	Plant specific	26	Table	0.04	0.59
	#2 Shell Plates	C2594-1	3.14E18	-10°F	Plant specific	26	Table	0.04	0.63
	#2 Shell Plates	C2594-2	3.14E18	0°F	Plant specific	26	Table	0.04	0.63
	#2 Shell Plates	A1224-1	3.14E18	0°F	Plant specific	26	Table	0.04	0.63
	#2 Shell Axial Welds	627260	3.14E18	-30°F	Plant specific	82	Table	0.06	1.08
	#2 Shell Axial Welds	5P6214B	3.14E18	-50°F	Plant specific	27	Table	0.02	0.82
	#2 Shell Axial Welds	626677	3.14E18	-20°F	Plant specific	20	Table	0.03	1.04

References for Grand Gulf 1

Fluence datum is from July 6, 1992, letter from W. T. Cottle (EO) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1. The staff assumed that the fluence of 2.11E18 was the value at T/4 because the same fluence was reported in FSAR for T/4 location.

Chemical composition and IRT data are from the Grand Gulf FSAR. (Only #2 shell plates are in the neutron active zone)

Ni contents for welds 5P6214B and 627260 are found in attachment to February 28, 1989, letter from T. H. Cloninger (SER) to USNRC Document Control Desk, subject: Generic Letter 88-11, "NRC Position on Radiation Embrittlement of Reactor Vessel Materials and Its Impact on Plant Operations," Updated Information, AECM-89/0047

Ni content of weld 626677 is estimated at 1.00% per RG 1.99, Rev. 2

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Grand Gulf 1 EOL: 6/16/2022	#2 Shell Plates	C2593-2	A 5338-1	90	2.11E18	102	Direct
	#2 Shell Plates	C2594-1	A 5338-1	88	2.11E18	100	Direct
	#2 Shell Plates	C2594-2	A 5338-1	90	2.11E18	102	Direct
	#2 Shell Plates	A1224-1	A 5338-1	143	2.11E18	162	Direct
	#2 Shell Axial Welds	627?60	E8018, SMAW	106	2.11E18	121	Direct
	#2 Shell Axial Welds	5P62148	Linde 124, SAW	80	2.11E18	91	Direct
	#2 Shell Axial Welds	626677	E8018, SMAW	84	2.11E18	95	Direct

References for Grand Gulf 1

Chemical composition and UUSE data are from the Grand Gulf FSAR (Only #2 shell plate are in the neutron active zone).

Fluence datum is from July 6, 1992, letter from W. T. Cottle (EO) to USNRC Document Control Desk, subject: Response to Generic Letter 92-01, Revision 1. The location of the fluence of 2.11E18 was not identified there. The staff assumes the location to be T/4 because this same fluence was reported in FSAR for the T/4 location.

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
River Bend EOL: 8/29/2025	#2 shell plates	C3138-2	6.64E18	9°F	Plant specific	51	Table	0.08	0.63
	#2 shell plates	C3054-1	6.64E18	-20°F	Plant specific	58	Table	0.09	0.70
	#2 shell plates	C3054-2	6.64E18	2°F	Plant specific	58	Table	0.09	0.70
	Axial Welds	492L4871/ A421B27AE	6.64E18	-60°F	Plant specific	54	Table	0.04	0.95
	Axial Welds	492L4871/ A421B27AF	6.64E18	-50°F	Plant specific	41	Table	0.03	0.98
	Axial Welds	5P6756	6.64E18	-50°F	Plant specific	122	Table	0.09	0.92

Reference for River Bend

Chemical composition, fluence, and IRT data are from July 2, 1992, letter from W. H. Odell (GSUCo) to USNRC Document Control Desk, subject: River Bend--Unit 1, Docket No. 50-458 (Only #2 shell plates are in the neutron active zone)

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
River Bend EOL: 8/29/2025	#2 Shell Plate	C3138-2	A 5338-1	67	4.8E18	79	Direct
	#2 Shell Plate	C3054-1	A 5338-1	78	4.8E18	93	Direct
	#2 Shell Plate	C3054-2	A 5338-1	80	4.8E18	95	Direct
	Axial Welds	492L4871	SMAW	132	4.8E18	157	Direct
	Axial Welds	492L4871	SMAW	110	4.8E18	130	Direct
	Axial Welds	5P6756	SAW	78	4.8E18	98	Direct

Reference for River Bend

Chemical composition, fluence, and UUSE data are from July 2, 1992, letter from W. H. Odell (GSUCo) to USNRC Document Control Desk, subject: River Bend--Unit 1, Docket No. 50-458

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
WNP-2 EOL: 12/20/2023	Ring #1	C1272-1	1.4E18	28°F [1]	Plant specific	110	Table	0.15	0.60
	Ring #1	C1273-1	1.4E18	20°F [1]	Plant specific	100	Table	0.14	0.60
	Ring #1	C1272-2	1.4E18	0°F [1]	Plant specific	110	Table	0.15	0.60
	Ring #1	C1273-2	1.4E18	4°F [1]	Plant specific	100	Table	0.14	0.60
	Ring #2	B5301-1	1.4E18	-20°F	Plant specific	95.5	Table	0.14	0.50
	Ring #2	C1336-1	1.4E18	-8°F [1]	Plant specific	91	Table	0.13	0.50
	Ring #2	C1337-1	1.4E18	-20°F	Plant specific	105.05	Table	0.15	0.51
	Ring #2	C1337-2	1.4E18	-20°F	Plant specific	105.05	Table	0.15	0.51
	Circ. Weld AB	5P6756 (S)	1.4E18	-60°F	Plant specific	122	Table	0.09	0.93
		5P6756 (T)	1.4E18	-50°F	Plant specific	122	Table	0.09	0.92
		3P4955 (S)	1.4E18	-20°F	Plant specific	41	Table	0.03	0.90
		3P4955 (T)	1.4E18	-20°F	Plant specific	41	Table	0.03	0.95
	Axial Welds BA/BD	3P4966	1.4E18	-26°F [1]	Plant specific	41	Table	0.03	0.85
	Axial Welds BE/BH	3P4966	1.4E18	-26°F [1]	Plant specific	41	Table	0.03	0.85

References for WNP-2

IRT data for circ. welds are from the attachment to the response to RAI (GL 92-01) dated September 21, 1993.

Weld chemical composition and IRT data are from Table 5.3-5 of Technical Specifications. Plate chemical composition and IRT data are from Table 5.3-4 of FSAR.

Fluence datum is from page 5.3-5d of the WNP-2 FSAR (Amendment 36, December 1985)

[1] Additional information required to confirm value.

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
WNP-2 EOL: 12/ 20/2023	Ring #1	C1272-1	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #1	C1273-1	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #1	C1272-2	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #1	C1273-2	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #2	B5301-1	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #2	C1336-1	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #2	C1337-1	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Ring #2	C1337-2	A 5338-1	EMA[2]	9.4E17	EMA[2]	---
	Circ. Weld AB	5P6756(S)	Linde 124	79	9.4E17	91	direct
	Circ. Weld AB	5P6756(T)	Linde 124	84	9.4E17	97	direct
	Circ. Weld AB	3P4955(S)	Linde 124	81	9.4E17	90	direct
	Circ. Weld AB	3P4955(T)	Linde 124	86	9.4E17	95	direct
	Axial Welds BA/BD	3P4966	Linde 124, SAW	EMA[2]	9.4E17	EMA[2]	---
	Axial Welds BE/BH	3P4966	Linde 124, SAW	EMA[2]	9.4E17	EMA[2]	---

References for WNP-2

UUSE data for circ. welds are from the attachment to the response to RAI (GL 92-01) dated September 21, 1993.

Weld chemical composition data are from Table 5.3-5 of Technical Specifications. Plate chemical composition and IRT data are from Table 5.3-4 of FSAR.

Fluence datum is from page 5.3-5d of the WNP-2 FSAR (Amendment 36, December 1985)

Plate UUSE data are from page B 3/4.4.6-1 of the WNP-2 Technical Specifications. There are no weld UUSE data.

[2]Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1