CATEGORY 1

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ACCESSION NBR:9908310244 DOC.DATE: 99/08/26 NOTARIZED: NO DOCKET #
FACIL:50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
AUTH.NAME AUTHOR AFFILIATION
STALL,J.A. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Records Management Branch (Document Control Desk)

SUBJECT: Informs that FPL has reviewed reactor vessel integrity database,called RVID2,re closure of GL 92-01,rev 1,suppl 1. Requested corrections & marked up pages from RVID 2 database summary repts that correspond to comments,attached.

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TITLE: Generic Letter 92-01, Rev 1, Suppl 1 Responses (Reactor Vessel Struct

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Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

L-99-189
August 26, 1999 10 CFR 50.4

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Requested Corrections to the NRC RVID2 Database
Generic Letter 92-01 Revision 1 Supplement 1

By letter dated June 25, 1999, the NRC issued the closure letter for Generic Letter (GL) 92-01, Revision 1, Supplement 1 with respect to St. Lucie Units 1 and 2. In the closure letter, Florida Power & Light Company (FPL) was advised that the Staff had reviewed the responses to the GL 92-01 and had compiled the information into the Reactor Vessel Integrity Database called RVID2. The NRC recommended FPL review the updated information in the NRC database and provide comments by September 1, 1999.

FPL has reviewed the RVID2 contents relative to St. Lucie Units 1 and 2 and the requested corrections are attached. Also attached are the marked up pages from the RVID2 database summary reports that correspond to the comments. There is no new information in this letter, only references to previous FPL submittals.

Please contact us if there are any questions.

Very truly yours,

J. A. Stall
Vice President
St. Lucie Plant

JAS/GRM

310671

A028 1/1

Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

St. Lucie Units 1 and 2
Requested Corrections to the NRC RVID2 database

St. Lucie Unit 1 PTS Summary Report:

1) The updated request for additional information (RAI) response in the third NRC reference also provided new phosphorus (P) and sulfur (S) values for weld heat 305424 based on a combination of initial fabrication chemistry. and data from Beaver Valley Unit 1 surveillance capsule reports (WCAP-12005). The new composite P and S chemical values for weld heat 305424 are 0.016 %P and 0.008 %S and should be changed in the database. The third reference should be changed to read as follows: RTndt(u) values for plates C-7-2 and C-7-3, and weld 3-203 (heat number 305424) are from the November 15, 1993 letter from D. A. Sager (FPL) to the USNRC Document Control Desk (L-93-286), Subject: St. Lucie Unit 1 and 2 Generic Letter 92-01 Revision 1 Response to Request for Additional Information. Also reference sister plant Beaver Valley 1 – WCAP–12005.

   Please note that the correct date to the reference is November 15, 1993 instead of 1994 and in that letter FPL made reference to the Beaver Valley 1 reference of WCAP-12005 instead of WCAP-12000.

2) Updated fluence was provided for the beltline materials in the latest FPL PTS submittal. The neutron fluence for all 6 beltline plates and circ weld seam 9-203 (heat 90136) was reported to be 3.42E+19 and for axial weld seams 2-203 and 3-203 was reported to be 2.27E+19. The reference should state: Fluence data for the plates and welds are from the May 14, 1996 letter (L-96-112) from D. A. Sager (FPL) to the USNRC Document Control Desk, Subject: St. Lucie Unit 1 and 2 Evaluation of PTS of Reactor Vessel Beltline Materials.

St. Lucie Unit 1 Upper Shelf Energy Summary Report:

1) No Comment

St. Lucie Unit 1 Surveillance Data Summary:

1) The fluence value from capsule W-97 should be 0.55 E+19 and should be the same value for all materials. The reference is FPL St. Lucie Unit 1 Evaluation of Irradiated Capsule W-97, dated December 1983, CE Report TR-F-MCM-004.

St. Lucie Unit 2 PTS Summary Report:

1) Weld heat 83637 was only used in a portion of the intermediate shell axial weld 101-124 C. It was not use in intermediate shell axial welds 101-124 A or 101-124 B. The reference noting this information is the November 15, 1993 letter from D. A. Sager (FPL)

to the USNRC Document Control Desk (L-93-286), Subject: St. Lucie Unit 1 and 2 Generic Letter 92-01 Revision 1 Response to Request for Additional Information.

Please note that a similar correction was provided to the EPRI industry database RPVDATA.

2) Updated fluence was provided for the beltline materials in the latest FPL PTS submittal. The neutron fluence for all beltline materials was reported to be 2.76E+19. The reference should state: Fluence data for the plates and welds are from the May 14, 1996 letter (L-96-112) from D. A. Sager (FPL) to the USNRC Document Control Desk, Subject: St. Lucie Unit 1 and 2 Evaluation of PTS of Reactor Vessel Beltline Materials.

3) The RTndt(u) data for intermediate shell axial welds 101-124 A, B, and C using weld heat 83642 was the subject of a NRC RAI to T.F. Plunkett (FPL) on March 13, 1997. The NRC noted that there was sufficient scatter data in the industry data to question the use of a single plant specific data point (-80°F). FPL chose to use the generic value of -56 °F for determining the RTndt(u) for these non limiting axial welds to perform PTS calculations. The reference is the May 14, 1997 letter (L-97-136) from J. A. Stall (FPL) to the USNRC Document Control Desk, Subject: St. Lucie Unit 1 and 2, Request for Additional Information - Response 10CFR50.61 PTS Evaluation.

4) The nickel value for the intermediate to lower shell circ. Weld, 101-171 with weld heat 83637 is incorrectly entered. The correct value is 0.07 wt % Ni, per the August 28, 1997 FPL letter that the NRC has referenced.

St. Lucie Unit 2 Upper Shelf Energy Summary Report:

1) Weld heat 83637 was only used in a portion of the intermediate shell axial weld 101-124 C. It was not use in intermediate shell axial welds 101-124 A or 101-124 B. (Same comment from the PTS Report)

St. Lucie Unit 2 Surveillance Data Summary:

1) FPL submitted the results of the second St. Lucie Unit 2 Surveillance Capsule Evaluation. In that report the results from the first capsule were also updated with new fluence and delta RTndt as determined using a hyperbolic Tan fitting program. The summary results pages 30 and 98 from WCAP-15040 are attached for updating the fluence, capsule lead factors, shift and the new data for the 263° capsule materials. The reference is Analysis of capsule 263° from the St. Lucie Unit 2 Reactor Vessel Surveillance Program, dated April 1998, WACP-15040. This reference was submitted in a letter dated April 28, 1998 (L-98-119) from J. A. Stall (FPL) to the USNRC Document Control Desk, Subject: St. Lucie Unit 2 Reactor Vessel Surveillance Capsule Report of Test Results.

St. Lucie Unit 2 Additional Data:

1) The reactor vessel radius is 86.8". This data was submitted in a letter dated February 7, 1990 (L-90-43) form J. H. Goldberg (FPL) to the USNRC Document Control Desk, Subject: St. Lucie Unit 2 Proposed License Amendment, P-T Limits and LTOP Analysis.

Also attached are the marked up pages from the RVID2 database summary reports that correspond to the comments. There is no new information in this letter, only references to previous Licensing submittals.

Printed 8/14/1999 10:25:32
Page 1

NRC - Reactor Vessel Integrity Database

PTS Summary Report

ST. LUCIE 1

Docket No: 50-335
EOL Date: 03/01/2016

Beltline Identification		RTpts @EOL	Neutron Fluence @EOL	RTndt(u)	RTndt(u) METHOD	ΔRTndt(u) @EOL	Fluence Factor @EOL	Chem Factor	Chemistry Factor Method	Margin	Margin Method	Cu %	Ni %	P %	S %
Type	Heat ID														
INTERMEDIATE SHELL C-7-1		132.3	3.37	0.0	MTEB 5-2	98.3	1.318	74.60	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.110	0.640	0.004	0.013
PLATE	A-4567-1														
INTERMEDIATE SHELL C-7-3		141.3	3.37	10.0	MTEB 5-2	97.3	1.318	73.80	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.110	0.580	0.004	0.012
PLATE	A-4567-2														
INTERMEDIATE SHELL C-7-2		122.3	3.37	-10.0	MTEB 5-2	98.3	1.318	74.60	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.110	0.640	0.004	0.010
PLATE	B-9427-1														
LOWER SHELL C-8-1		196.1	3.37	20.0	MTEB 5-2	142.1	1.318	107.80	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.150	0.560	0.006	0.010
PLATE	C-5935-1														
LOWER SHELL C-8-2		142.2	3.37	20.0	PLANT SPECIFIC	105.2	1.318	79.82	SURVEILLANCE NON-RATIO	17.0	POSITION 2.1 (S DATA)	0.150	0.570	0.006	0.010
PLATE	C-5935-2														
LOWER SHELL C-8-3		142.9	3.37	0.0	MTEB 5-2	108.9	1.318	82.60	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.120	0.580	0.004	0.010
PLATE	C-5935-3														
LOWER SHELL AXIAL WELDS 3-203		206.5	2.27	-60.0	SISTER PLANT	238.5	1.222	195.16	SURVEILLANCE RATIO	28.0	POSITION 2.1 (S DATA)	0.270	0.630	0.01	0.01
WELD	305424														
INT./LOWER SHELL CIRC WELD 9-203		79.8	3.37	-60.0	PLANT SPECIFIC	111.8	1.318	84.80	SURVEILLANCE NON-RATIO	28.0	POSITION 2.1 (S DATA)	0.270	0.070	0.013	0.012
WELD	90136														
INTERMEDIATE SHELL AXIAL WELDS 2-203		118.8	2.13	-56.0	GENERIC	109.3	1.206	90.65	TABLE	65.5	POSITION 1.1 (NO S DATA)	0.190	0.090	0.018	0.017
WELD	A8746/34B009(T)														

Plant References and Beltline Material Notes

Chemical composition for the welds are from CE-NPSD-1039, Revision 2 (June 1997) as stated in the letter dated August 28, 1997 from J. A. Stall to the USNRC Document Control Desk, subject: St. Lucie Units 1 and 2 Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 1, Updated Information.

(1) Chemical composition for the plates, fluence, and RTndt(u) values are from the July 1, 1992 letter from W. H. Bohlke (FPL) to the USNRC Document Control Desk, subject: Generic Letter 92-01, Revision 1, Response.

RTndt(u) values for plates C-7-2 and C-7-3, and welds 3-203 (heat number 305424) are from the November 15, 1993 letter from the licensee (reference sister plant Beaver Valley 1-WCAP-12000).

By letter dated July 1, 1994 the licensee agreed with the NRC that the chemistry factors (CFs) for plates C-8-1 and C-8-3 are 79.42 and 60.85 respectively. However upon further review, the NRC determined that these two CFs were calculated based on surveillance data that are not credible. Therefore the CFs are determined by the Regulatory Guide (RG) 1.99 Tables.

There is a slight calculational difference in the CF value calculated by the staff and by the licensee for weld 3-203 (heat number 305424). The CF was calculated using Beaver Valley Unit 1 surveillance data (integrated surveillance program) and the ratio procedure described in RG 1.99, Revision 2. The staff's CF value is 195. 2 and the licensee's value is 194.63. The corresponding RTpts values calculated by the staff and the licensee are 206.5 and 205.8 degrees F, respectively. Both values are well below the PTS screening criteria of 270 degrees F.

The CF method for weld 9-203 (heat number 90136) is "surveillance-non-ratio" because the chemistry of the beltline weld is the same as the chemistry of the surveillance weld.

(1) See Comment # 1 For the St Lucie 1 PTS Summary Report.

(2) See Comment # 2 For the St Lucie 1 PTS Summary Report

NRC - Reactor Vessel Integrity Database

Surveillance Data Summary

Printed 8/14/1999 1:03:37 P

Page 1

ST. LUCIE 1

Docket No: 50-335

EOL Date: 03/01/2016

Type / Direction	Heat ID / Capsule, Lead Factor	Neutron Fluence	Fluence Factor	Group CF	Used In CF Calcs	Predicted ΔRTndt	Measured ΔRTndt	Predicted - Δsasured	Credible RG1.99 Scatter	σ of Pred-Meas ΔRTndt	Unir USE	Meas USE	%Drop In USE	%Drop In USE Line Offset	Cu %	Ni %	P %	S %
PLATE	C-5935-2	0.72	0.91	79.8	YES	72.3	67.0	5.3	YES	4.0	139.0	116.0	16.55	1.25244	0.150	0.570	0.006	0.010
LONGITUDINAL	104, 0.96																	
PLATE	C-5935-2	0.54	0.83	79.8	YES	66.1	68.0	-1.9	YES	4.0	139.0	107.0	23.02	1.42434	0.150	0.570	0.006	0.010
LONGITUDINAL	W-97, 1.41																	
PLATE	C-5935-2	0.54	0.83	79.8	YES	66.1	70.0	-3.9	YES	4.0	103.0	78.0	24.27	1.44731	0.150	0.570	0.006	0.010
TRANSVERSE	W-97, 1.41																	
PLATE	CM	0.72	0.91		NO		110.0				134.0	87.0	35.07	1.57868	0.180	0.660	0.008	0.008
LONGITUDINAL	104, 0.96																	
WELD	305424	0.69	0.89	191.9	YES	171.8	164.4	7.4	YES	14.8	108.0	83.0	23.15	1.40133	0.270	0.610	0.018	0.006
N/A	U, 1.10																	
WELD	305424	0.34	0.70	191.9	YES	134.9	157.8	-22.9	YES	14.8	108.0	77.0	28.70	1.56414	0.270	0.610	0.018	0.006
N/A	V, 1.65																	
WELD	305424	1.06	1.02	191.9	YES	195.0	185.6	9.4	YES	14.8	108.0	78.0	27.78	1.43815	0.270	0.610	0.018	0.006
N/A	W, 1.10																	
WELD	90136	0.72	0.91	84.8	YES	76.8	73.0	3.8	YES	4.0	144.0	108.0	25.00	1.43083	0.270	0.070	0.013	0.012
N/A	104, 0.96																	
WELD	90136	0.53	0.82	84.8	YES	69.8	74.0	-4.2	YES	4.0	144.0	100.0	30.56	1.54759	0.270	0.070	0.013	0.012
N/A	W-97, 1.41																	

① See Comment #5 for St Lucie Unit 1 Surveillance Data Summary

NRC - Reactor Vessel Integrity Database

PTS Summary Report

ST. LUCIE 2

Printed 8/14/1999 12:38:35
Page 1

Docket No: 50-389
EOL Date: 04/06/2023

Beltline Identification		RTpts @EOL	Neutron Fluence @EOL	RTndt(u)	RTndt(u) METHOD	ΔRTndt(u) @EOL	Fluence Factor @EOL	Chem Factor	Chemistry Factor Method	Margin	Margin Method	Cu %	Ni %	P %	S %
Type	Heat ID														
LOWER SHELL M-4116-2		111.0	3.070	20.0	PLANT SPECIFIC	57.0	1.296	44.00	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.070	0.600	0.000	0.000
PLATE	A-3131-1														
LOWER SHELL M-4116-3		111.0	3.070	20.0	PLANT SPECIFIC	57.0	1.296	44.00	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.070	0.600	0.000	0.000
PLATE	A-3131-2														
INTERMEDIATE SHELL M-605-3		130.1	3.070	0.0	PLANT SPECIFIC	96.1	1.296	74.15	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.110	0.610	0.000	0.000
PLATE	A-8490-1														
INTERMEDIATE SHELL M-605-1		160.1	3.070	30.0	PLANT SPECIFIC	96.1	1.296	74.15	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.110	0.610	0.000	0.000
PLATE	A-8490-2														
INTERMEDIATE SHELL M-605-2		162.6	3.070	10.0	PLANT SPECIFIC	118.6	1.296	91.50	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.130	0.620	0.000	0.000
PLATE	B-3416-2														
LOWER SHELL M-4116-1		102.0	3.070	20.0	PLANT SPECIFIC	48.0	1.296	37.00	TABLE	34.0	POSITION 1.1 (NO S DATA)	0.060	0.570	0.000	0.000
PLATE	B-8307-2														
INT/LOWER SHELL CIRC WELD 101-171		23.8	3.070	-80.0	PLANT SPECIFIC	51.9	1.296	40.05	TABLE	51.9	OVERRIDE	0.070	0.070	0.000	0.000
WELD	3P7317														
INT SHELL AXIAL WELDS 101-124A,B,C		38.2	3.070	-50.0	PLANT SPECIFIC	44.1	1.296	34.05	TABLE	44.1	OVERRIDE	0.050	0.070	0.000	0.000
WELD	83637														
INT./LOWER SHELL CIRC WELD 101-171		19.8	3.070	-70.0	PLANT SPECIFIC	44.9	1.296	34.63	TABLE	44.9	OVERRIDE	0.050	0.070	0.000	0.000
WELD	83637														
LOWER SHELL AXIAL WELDS 101-142A,B,C		38.2	3.070	-50.0	PLANT SPECIFIC	44.1	1.296	34.05	TABLE	44.1	OVERRIDE	0.050	0.070	0.000	0.000
WELD	83637														
INTERMEDIATE SHELL AXIAL WELDS 101-124A,B,C		14.2	3.070	-80.0	PLANT SPECIFIC	47.1	1.296	36.35	TABLE	47.1	OVERRIDE	0.050	0.090	0.000	0.000
WELD	83642														

Plant References and Beltline Material Notes

NOTE: Margin method for all beltline welds is "override" since sigma delta need not be greater than 1/2 delta RTndt per RG 1.99, Rev. 2.

Chemical composition for the welds are from CE-NPSD-1039, Revision 2 (June 1997) as stated in the letter dated August 28, 1997 from J. A. Stall to the USNRC Document Control Desk, subject: St. Lucie Units 1 and 2 Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 1, Updated Information.

All other data, including plate chemical composition, are from the November 15, 1993 letter from D. A. Segar to the USNRC Document Control Desk, subject: "St. Lucie Units 1 and 2, Response to Request for Additional Information GL 92-01, Revision 1."

See Comment #s for the St Lucie 2 PTS Summary Report

Printed 8/14/1999 2:05:21 P
Page 1

NRC - Reactor Vessel Integrity Database

Upper Shelf Energy Summary Report

ST. LUCIE 2

Docket No: 50-389
EOL Date: 04/06/2023

Beltline Identification		Material Type	USE @ EOL @ 1/4T	1/4 T NeutronFluence @ EOL	Unirradiated USE	Unirradiated USE Method	%Drop in USE @ EOL @ 1/4T	%Drop in USE Method	Cu %
Type	Heat ID								
LOWER SHELL M-4116-2		A 533B	82.04	1.830	105.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.070
PLATE	A-3131-1								
LOWER SHELL M-4116-3		A 533B	78.13	1.830	100.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.070
PLATE	A-3131-2								
INTERMEDIATE SHELL M-605-3		A 533B	87.12	1.830	113.00	DIRECT	22.90	POSITION 1.2 (NO S DATA)	0.110
PLATE	A-8490-1								
INTERMEDIATE SHELL M-605-1		A 533B	80.96	1.830	105.00	DIRECT	22.90	POSITION 1.2 (NO S DATA)	0.110
PLATE	A-8490-2								
INTERMEDIATE SHELL M-605-2		A 533B	84.64	1.830	113.00	DIRECT	25.10	POSITION 1.2 (NO S DATA)	0.130
PLATE	B-3416-2								
LOWER SHELL M-4116-1		A 533B	71.10	1.830	91.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.060
PLATE	B-8307-2								
INT./LOWER SHELL CIRC WELD 101-171		LINDE 124	72.98	1.830	96.00	DIRECT	23.98	POSITION 1.2 (NO S DATA)	0.070
WELD	3P7317								
INT SHELL AXIAL WELDS 101-124A,B,C		LINDE 0091	106.26	1.830	136.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.050
WELD	83637								
INT./LOWER SHELL CIRC WELD 101-171		LINDE 124	89.85	1.830	115.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.050
WELD	83637								
LOWER SHELL AXIAL WELDS 101-142A,B,C		LINDE 0091	106.26	1.830	136.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.050
WELD	83637								
INTERMEDIATE SHELL AXIAL WELDS 101-124A,B,C		LINDE 0091	90.63	1.830	116.00	DIRECT	21.87	POSITION 1.2 (NO S DATA)	0.050
WELD	83642								

Plant References and Beltline Material Notes

NOTE: Margin method for all beltline welds is "override" since sigma delta need not be greater than 1/2 delta RTndt per RG 1.99, Rev. 2.

Chemical composition for the welds are from CE-NPSD-1039, Revision 2 (June 1997) as stated in the letter dated August 28, 1997 from J. A. Stall to the USNRC Document Control Desk, subject: St. Lucie Units 1 and 2 Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 1, Updated Information.

All other data, including plate chemical composition, are from the November 15, 1993 letter from D. A. Segar to the USNRC Document Control Desk, subject: "St. Lucie Units 1 and 2, Response to Request for Additional Information GL 92-01, Revision 1."

(1) See comments on the St. Lucie 2 Upper Shelf Energy Summary Report.

NRC - Reactor Vessel Integrity Database

Printed 8/14/1999 12:55:32
Page 1

Surveillance Data Summary

ST. LUCIE 2

Docket No: 50-389
EOL Date: 04/06/2023

Type / Direction	Heat ID / Capsule, Lead Factor	Neutron Fluence	Fluence Factor	Group CF	Used in CF Calcs	Predicted ΔRTndt	Measured ΔRTndt	Predicted - Δsasured	Credible RG1.99 Scatter	σ of Pred-Meas ΔRTndt	Unir USE	Meas USE	%Drop in USE	%Drop in USE Line Offset	Cu %	Ni %	P %	S %
PLATE	A-8490-2	0.16	0.52		YES		35.0				133.0	118.0	11.28	1.23853	0.110	0.610	0.007	0.010
LONGITUDINAL	W-83, 1.26																	
PLATE	A-8490-2	0.16	0.52		YES		21.0				117.0	111.0	5.13	0.89563	0.110	0.610	0.007	0.010
TRANSVERSE	W-83, 1.26																	
WELD	83837	0.16	0.52		YES		0.0				115.0	99.0	13.91	1.33035	0.050	0.070	0.008	0.011
N/A	W-83, 1.26																	

See comments for the St Lucie Unit 2 surveillance Data Summary

TABLE 5-10

Comparison of the St. Lucie Unit 2 Surveillance Material 30 ft-lb Transition Temperature Shifts and Upper Shelf Energy Decreases with Regulatory Guide 1.99, Revision 2, Predictions

Material	Capsule	Fluence(n/cm² ,E > 1.0 MeV) (x 10 19)	30 ft-lb Transition Temperature Shift			Upper Shelf Energy Decrease	
			Predicted (°F) (a)	Predicted (°F) (b)	Measured(°F) (c)	Predicted (%) (a)	Measured (%)(d)
Inter. Shell Plate	83°	0.1779	40.22	47.5	45	13.5	11
M-605-1(Long.)	263°	---	---	---	---	---	---
Inter. Shell Plate	83°	0.1779	40.22	47.5	30	13.5	2
M-605-1(Trans.)	263°	1.244	78.36	92.6	103	21.0	23
Weld Metal	83°	0.1779	17.8	13	14	12.5	10
Heat 83637 Linde 124 Lot 0951	263°	1.244	34.7	26	26	20.0	6
HAZ Metal	83°	0.1779	---	---	0.00(e)	---	0
	263°	1.244	---	---	73	---	0
SRM	83°	---	---	---	---	---	---
(HSST 01 MY Plate)	263°	1.244	143.7	---	131	---	30

(a) Based on Reg. Guide 1.99, Rev. 2, methodology using the mean weight percent values of Cu and Ni of the surveillance material(See Table 4-1).
(b) Based on Reg. Guide 1.99, Rev. 2, methodology using chemistry factor calculated from surveillance data (Plate CF = 87.7, Weld CF = 24.8).
(c) Calculated using measured Charpy data plotted using CVGRAPH, Version 4.1 (See Appendix C).
(d) Values are based on the definition of upper shelf energy given in ASTM E185-82.
(e) Due to the scatter in Capsule 83° HAZ charpy test results, a true hyperbolic tangent curve fit resulted in a ΔT_{30} of -25.04 when compared to unirradiated charpy test data. Physically this should not happen. Hence, based on engineering judgment a value of 0°F is reported here (ie. No change in ΔT_{30}).

SECTION 7.0
SURVEILLANCE CAPSULE REMOVAL SCHEDULE

The following surveillance capsule removal schedule meets the intent of ASTM E185-82 and is recommended for future capsules to be removed from the St. Lucie Unit 2 reactor vessel* This recommended removal schedule is applicable to 32 EFPY of operation.

TABLE 7-1

St. Lucie Unit 2 Reactor Vessel Surveillance Capsule Withdrawal Schedule

Capsule	Location	Lead Factor[a]	Removal Time (EFPY)[b]	Fluence (n/cm^2, $E > 1.0$ MeV)[a]
83°	83°	1.30	1.11	1.779×10^{18}(c)
263°	263°	1.27	11	1.244×10^{19}(c)
97°	97°	1.27	24*	$\sim 2.67 \times 10^{19}$(d)
277°	277°	1.27	EOL	3.53×10^{19}(e)
104°	104°	0.98	Standby	---
284°	284°	0.98	Standby	---

Notes:

(a) Updated in Capsule 263° dosimetry analysis, See Table 6-15.

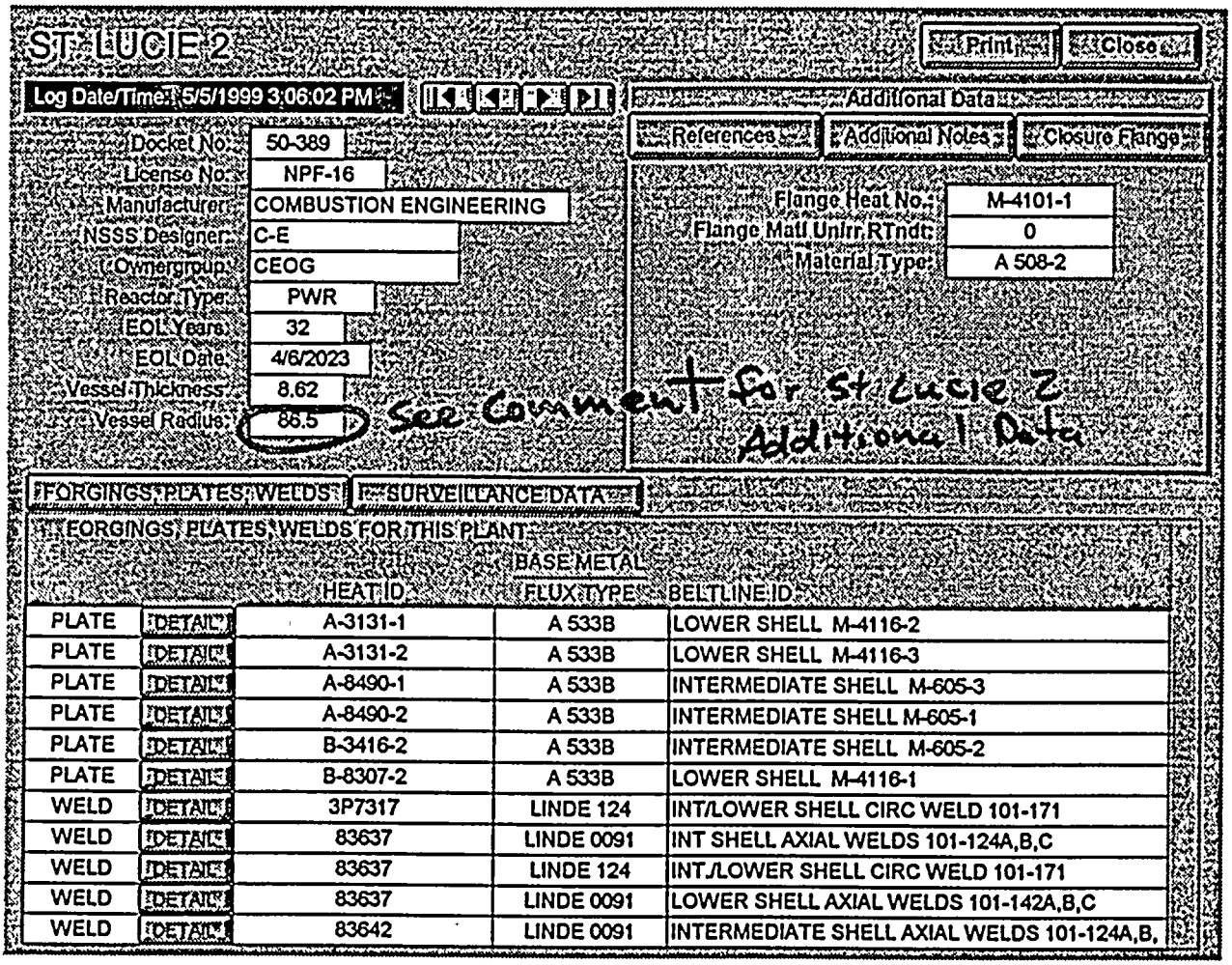
(b) Effective Full Power Years (EFPY) from plant startup.

(c) Plant specific evaluation.

(d) This fluence is approximately equal to the calculated peak reactor vessel surface fluence at 30 EFPY.

(e) This capsule will reach the peak reactor vessel surface (Clad/Base Metal Interface) fluence at life extension of 48 EFPY at 37.7 EFPY of operation. In addition, per ASTM E185-82, this capsule can be held without testing, thus serving as a standby capsule.

* The removal times are based on accumulated fluence values in E185-82 as opposed to time values due to the smaller lead factors associated with the capsules mounted on vessel inner radius.



ST LUCIE 2

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Docket No:	50-389
License No:	NPF-16
Manufacturer:	COMBUSTION ENGINEERING
NSSS Designer:	C-E
Ownergroup:	CEOG
Reactor Type:	PWR
EOL Years:	32
EOL Date:	4/6/2023
Vessel Thickness:	8.62
Vessel Radius:	86.5

See Comment for St Lucie 2 Additional Data

Additional Data | References | Additional Notes | Closure Flange

Flange Heat No.:	M-4101-1
Flange Matl Unirr RTndt:	0
Material Type:	A 508-2

FORGINGS, PLATES, WELDS | SURVEILLANCE DATA

FORGINGS, PLATES, WELDS FOR THIS PLANT

		HEAT ID	BASE METAL FLUX TYPE	BELTLINE ID
PLATE	DETAIL	A-3131-1	A 533B	LOWER SHELL M-4116-2
PLATE	DETAIL	A-3131-2	A 533B	LOWER SHELL M-4116-3
PLATE	DETAIL	A-8490-1	A 533B	INTERMEDIATE SHELL M-605-3
PLATE	DETAIL	A-8490-2	A 533B	INTERMEDIATE SHELL M-605-1
PLATE	DETAIL	B-3416-2	A 533B	INTERMEDIATE SHELL M-605-2
PLATE	DETAIL	B-8307-2	A 533B	LOWER SHELL M-4116-1
WELD	DETAIL	3P7317	LINDE 124	INT/LOWER SHELL CIRC WELD 101-171
WELD	DETAIL	83637	LINDE 0091	INT SHELL AXIAL WELDS 101-124A,B,C
WELD	DETAIL	83637	LINDE 124	INT./LOWER SHELL CIRC WELD 101-171
WELD	DETAIL	83637	LINDE 0091	LOWER SHELL AXIAL WELDS 101-142A,B,C
WELD	DETAIL	83642	LINDE 0091	INTERMEDIATE SHELL AXIAL WELDS 101-124A,B,