

Westinghouse 3-Loop Plant **Reactor Pressure Vessel Fluence Profiles**

This document contains spreadsheet data for RPV fluence at 54 EFPY (60 years) sent from Westinghouse, plus the associated e-mail correspondence

Stevens, Gary

From: Palm, Nathan A. [PalmN@westinghouse.com]
Sent: Wednesday, April 14, 2010 9:21 AM
To: Stevens, Gary
Cc: Focht, Eric; Heinecke, Carol C
Subject: RE: Fluence Data for Nozzle Evaluation

Gary,

I checked with our fluence people that provided the information. Its ok to post on ADAMS..without the plant name, but I don't think I ever gave that to you.

Nathan

From: Stevens, Gary [mailto:Gary.Stevens@nrc.gov]
Sent: Wednesday, April 14, 2010 8:46 AM
To: Palm, Nathan A.
Cc: Focht, Eric; Heinecke, Carol C
Subject: RE: Fluence Data for Nozzle Evaluation

Nathan:

Just following up on this -- I would like to file what you sent me in ADAMS. Is that OK?

Gary L. Stevens
Senior Materials Engineer
NRC/RES/DE/CIB
Gary.Stevens@nrc.gov
301-251-7569

From: Palm, Nathan A. [mailto:PalmN@westinghouse.com]
Sent: Wednesday, March 24, 2010 12:49 PM
To: Stevens, Gary
Cc: Focht, Eric; Heinecke, Carol C
Subject: RE: Fluence Data for Nozzle Evaluation

Gary,

I don't think it is an issue. I will verify and let you know.

You are correct about the location of the core top and bottom.

Nathan

From: Stevens, Gary [mailto:Gary.Stevens@nrc.gov]
Sent: Wednesday, March 24, 2010 12:46 PM
To: Palm, Nathan A.
Cc: Focht, Eric; Heinecke, Carol C
Subject: RE: Fluence Data for Nozzle Evaluation

Nathan:

Thank you -- this is great. I assume, since there are no plant names involved, you wouldn't have a problem with this being publicly posted?

Also, at what elevations are the bottom and top of the core -- is it +/- 72"?

Gary L. Stevens
Senior Materials Engineer
NRC/RES/DE/CIB
Gary.Stevens@nrc.gov
301-251-7569

From: Palm, Nathan A. [mailto:PalmN@westinghouse.com]
Sent: Wednesday, March 24, 2010 12:21 PM
To: Stevens, Gary
Cc: Focht, Eric; Heinecke, Carol C
Subject: Fluence Data for Nozzle Evaluation

Gary,

Here is the data you requested. This data is for a 3-Loop Westinghouse unit. Keep in mind that the dimensions are given in centimeters from the core mid-plane. There are 2 fluence profiles. One is the profile at the 0 degree location which provides the highest fluence in the beltline. The second is the profile at the 10 degree location which provides the fluence at the nozzle locations.

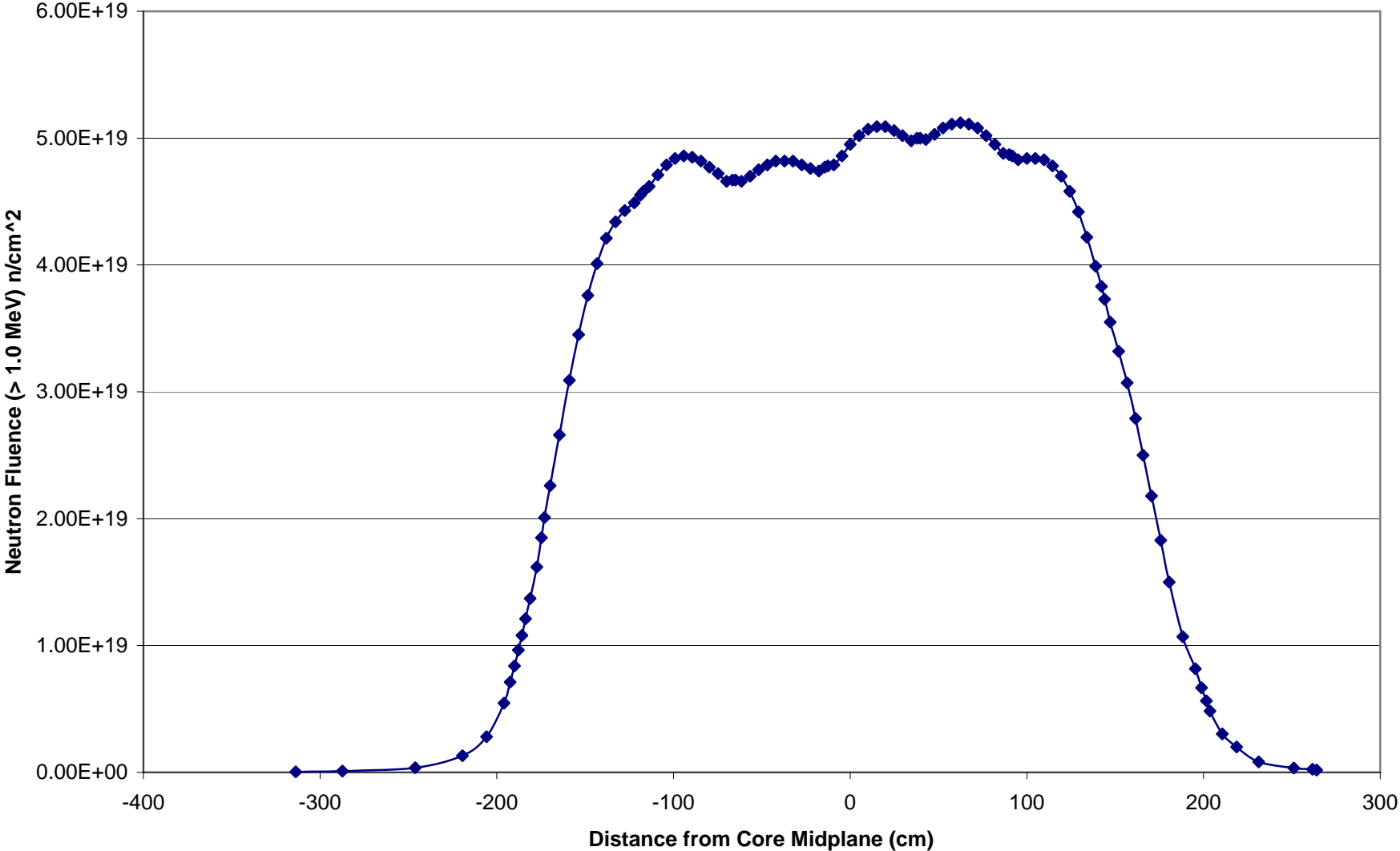
Please let me know if you have any questions or need anything else.

Nathan Palm
Westinghouse Electric Company
Aging Management & License Renewal Services
Please Note: New Contact Information as of 8/14/09
O. 412-374-2685
C: 412-897-0883
F. 412-374-6277

54 EFPY		
j	z(j)	Fluence
1	-313.829	3.52E+16
2	-287.337	9.35E+16
3	-246.215	3.57E+17
4	-219.469	1.31E+18
5	-205.871	2.81E+18
6	-195.993	5.46E+18
7	-192.511	7.12E+18
8	-189.992	8.39E+18
9	-187.774	9.64E+18
10	-185.72	1.08E+19
11	-183.753	1.21E+19
12	-181.061	1.37E+19
13	-177.423	1.62E+19
14	-174.731	1.85E+19
15	-172.985	2.01E+19
16	-169.876	2.26E+19
17	-164.63	2.66E+19
18	-158.996	3.09E+19
19	-153.75	3.45E+19
20	-148.503	3.76E+19
21	-143.257	4.01E+19
22	-138.01	4.21E+19
23	-132.764	4.34E+19
24	-127.518	4.43E+19
25	-122.271	4.49E+19
26	-118.775	4.55E+19
27	-117.029	4.58E+19
28	-113.721	4.62E+19
29	-108.851	4.71E+19
30	-103.98	4.79E+19
31	-99.109	4.84E+19
32	-94.239	4.86E+19
33	-89.368	4.85E+19
34	-84.498	4.82E+19
35	-79.628	4.77E+19
36	-74.757	4.72E+19
37	-69.886	4.66E+19
38	-66.578	4.67E+19
39	-64.832	4.67E+19
40	-61.524	4.66E+19
41	-56.653	4.70E+19
42	-51.783	4.75E+19
43	-46.912	4.79E+19
44	-42.042	4.82E+19
45	-37.172	4.82E+19
46	-32.301	4.82E+19
47	-27.431	4.79E+19
48	-22.56	4.76E+19
49	-17.689	4.74E+19
50	-14.381	4.77E+19
51	-12.635	4.78E+19
52	-9.326	4.79E+19
53	-4.695	4.86E+19

j	z(j)	54 EFPY Fluence
54	0	4.95E+19
55	5.11	5.02E+19
56	10.155	5.07E+19
57	15.026	5.09E+19
58	19.897	5.09E+19
59	24.767	5.06E+19
60	29.638	5.02E+19
61	34.508	4.98E+19
62	37.817	5.00E+19
63	39.563	5.00E+19
64	42.871	4.99E+19
65	47.742	5.03E+19
66	52.612	5.08E+19
67	57.483	5.11E+19
68	62.354	5.12E+19
69	67.224	5.11E+19
70	72.094	5.08E+19
71	76.965	5.02E+19
72	81.836	4.95E+19
73	86.706	4.88E+19
74	90.014	4.87E+19
75	91.76	4.86E+19
76	95.068	4.83E+19
77	99.939	4.84E+19
78	104.81	4.84E+19
79	109.68	4.83E+19
80	114.55	4.78E+19
81	119.421	4.70E+19
82	124.292	4.58E+19
83	129.162	4.42E+19
84	134.033	4.22E+19
85	138.903	3.99E+19
86	142.211	3.83E+19
87	143.957	3.73E+19
88	147.208	3.55E+19
89	151.965	3.32E+19
90	156.721	3.07E+19
91	161.477	2.79E+19
92	165.747	2.50E+19
93	170.504	2.18E+19
94	175.746	1.83E+19
95	180.502	1.50E+19
96	188.258	1.07E+19
97	195.383	8.17E+18
98	198.827	6.67E+18
99	201.618	5.65E+18
100	203.682	4.84E+18
101	210.558	3.03E+18
102	218.686	2.00E+18
103	231.263	8.31E+17
104	251.059	3.46E+17
105	261.75	2.45E+17
106	264	1.83E+17

Nozzle Max Fluence Profile at 10 deg.



j	z(j)	54 EFPY Fluence
1	-313.829	4.22E+16
2	-287.337	1.15E+17
3	-246.215	4.73E+17
4	-219.469	1.74E+18
5	-205.871	3.74E+18
6	-195.993	7.29E+18
7	-192.511	9.51E+18
8	-189.992	1.12E+19
9	-187.774	1.29E+19
10	-185.72	1.45E+19
11	-183.753	1.62E+19
12	-181.061	1.83E+19
13	-177.423	2.17E+19
14	-174.731	2.48E+19
15	-172.985	2.69E+19
16	-169.876	3.02E+19
17	-164.63	3.57E+19
18	-158.996	4.13E+19
19	-153.75	4.62E+19
20	-148.503	5.03E+19
21	-143.257	5.37E+19
22	-138.01	5.63E+19
23	-132.764	5.81E+19
24	-127.518	5.93E+19
25	-122.271	6.01E+19
26	-118.775	6.09E+19
27	-117.029	6.13E+19
28	-113.721	6.18E+19
29	-108.851	6.29E+19
30	-103.98	6.39E+19
31	-99.109	6.45E+19
32	-94.239	6.47E+19
33	-89.368	6.46E+19
34	-84.498	6.42E+19
35	-79.628	6.35E+19
36	-74.757	6.27E+19
37	-69.886	6.19E+19
38	-66.578	6.20E+19
39	-64.832	6.20E+19
40	-61.524	6.18E+19
41	-56.653	6.23E+19
42	-51.783	6.30E+19
43	-46.912	6.35E+19
44	-42.042	6.39E+19
45	-37.172	6.40E+19
46	-32.301	6.39E+19
47	-27.431	6.36E+19
48	-22.56	6.32E+19
49	-17.689	6.30E+19
50	-14.381	6.34E+19
51	-12.635	6.36E+19
52	-9.326	6.38E+19
53	-4.695	6.48E+19

j	z(j)	54 EFPY Fluence
54	0	6.59E+19
55	5.11	6.69E+19
56	10.155	6.76E+19
57	15.026	6.80E+19
58	19.897	6.80E+19
59	24.767	6.78E+19
60	29.638	6.72E+19
61	34.508	6.67E+19
62	37.817	6.69E+19
63	39.563	6.69E+19
64	42.871	6.68E+19
65	47.742	6.74E+19
66	52.612	6.81E+19
67	57.483	6.85E+19
68	62.354	6.87E+19
69	67.224	6.85E+19
70	72.094	6.81E+19
71	76.965	6.73E+19
72	81.836	6.64E+19
73	86.706	6.55E+19
74	90.014	6.53E+19
75	91.76	6.52E+19
76	95.068	6.47E+19
77	99.939	6.48E+19
78	104.81	6.49E+19
79	109.68	6.47E+19
80	114.55	6.41E+19
81	119.421	6.30E+19
82	124.292	6.14E+19
83	129.162	5.93E+19
84	134.033	5.66E+19
85	138.903	5.35E+19
86	142.211	5.14E+19
87	143.957	5.00E+19
88	147.208	4.76E+19
89	151.965	4.45E+19
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91	161.477	3.73E+19
92	165.747	3.35E+19
93	170.504	2.92E+19
94	175.746	2.45E+19
95	180.502	2.01E+19
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99	201.618	7.51E+18
100	203.682	6.43E+18
101	210.558	4.03E+18
102	218.686	2.65E+18
103	231.263	1.10E+18
104	251.059	4.55E+17
105	261.75	3.21E+17
106	264	2.41E+17

Midplane Max Fluence Profile at 0 deg

