

12th December 2007

MEMORANDUM

From: Mark EricksonKirk



To: Randy Nanstad
Bob Odette
Roger Stoller
Gary Was

cc: Richard Bass
Robert Hardies

**Subj: New Data from Boiling Water Reactor Vessel Integrity Program (BWRVIP)
Integrated Surveillance Project (ISP)**

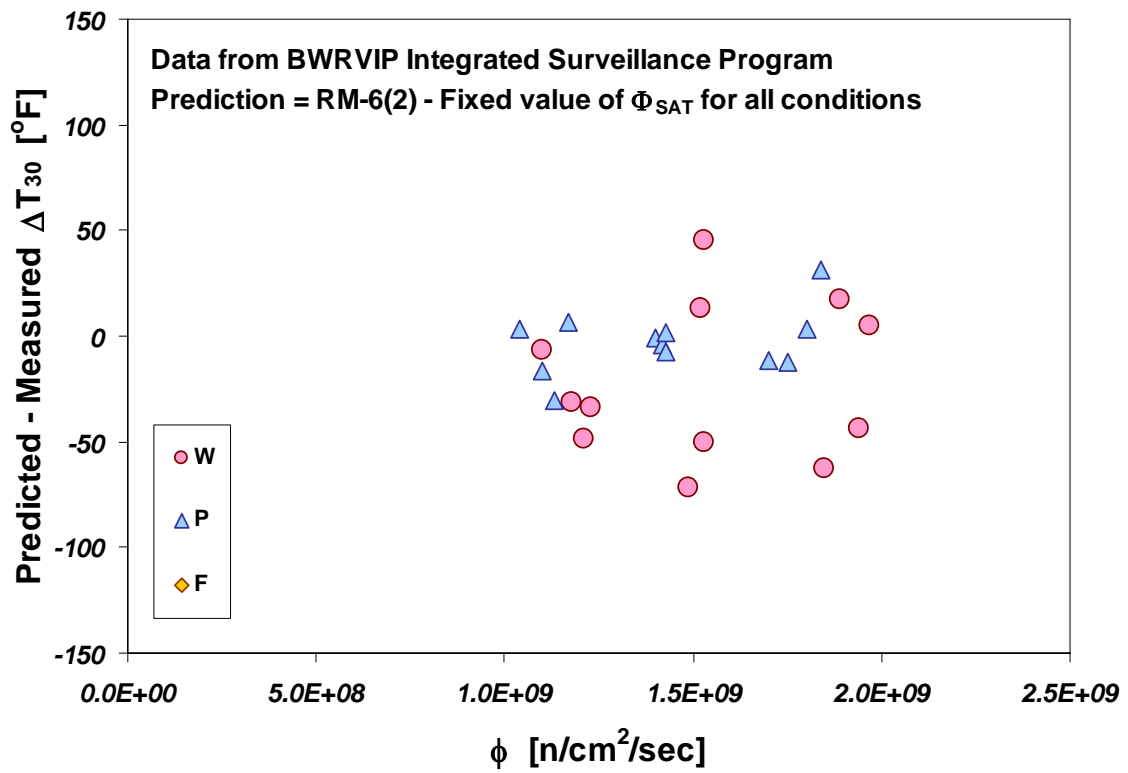
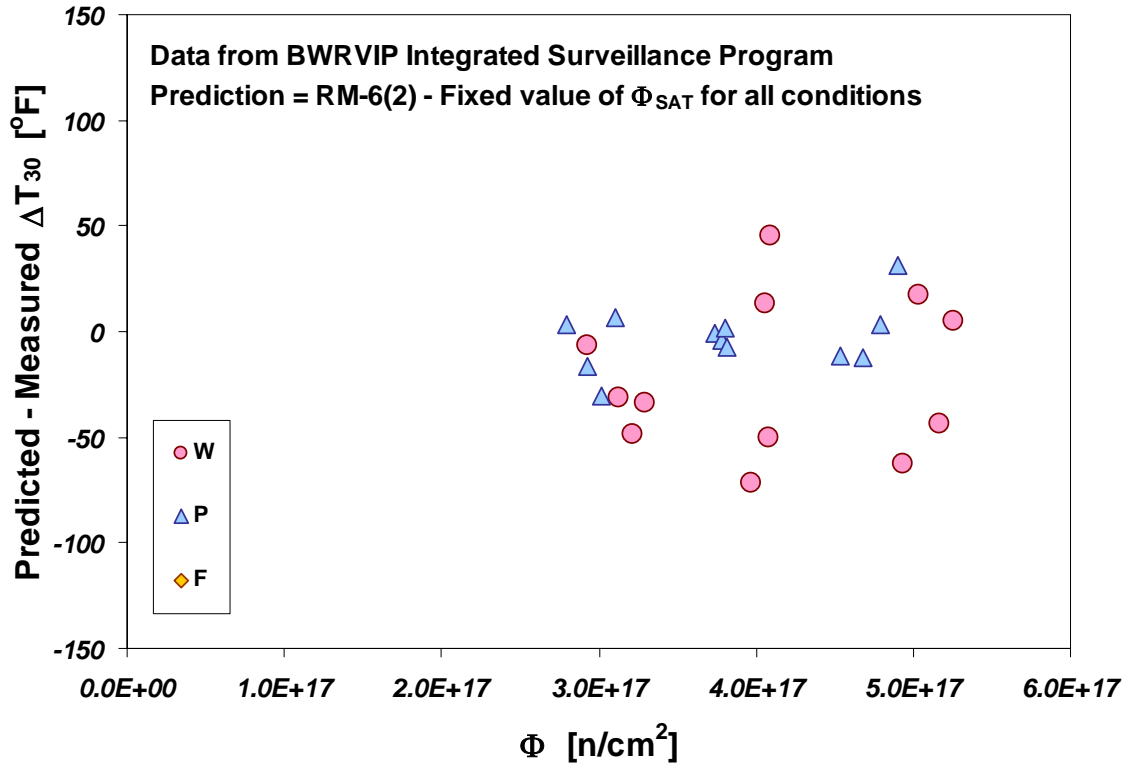
When we met in Santa Barbara in early November i promised to keep you apprised if i obtained any new data. Recently Bill Server sent me data obtained as part of the BWRVIP ISP. The 24 shift values detailed in the table on the next page were not used in fitting any of the ΔT_{30} correlations, either those recently developed at the NRC or those developed previously by Eason. It is therefore interesting to compare these data to the predictions of the various trend curves. These comparisons appear on the pages following the table. Overall the following conclusions can be drawn:

- None of the trend curves (RM-6(2), RM-9, or Eason 2006) exhibit any systematic un-modeled trends of either flux or fluence relative to these data. Even though the treatment of flux effects by models RM-6(2), RM-9, and Eason 2006 is different, all three models do an acceptable job of predicting the flux trends in these data.
- The uncertainty of the predictions of all three models is consistent with the uncertainty exhibited by the larger database from which the models were derived.
- The Eason 2006 model has the least uncertainty for this set of 24 shift values. This, however, is perhaps not surprising as the Eason 2006 model also uses more product form coefficients than either RM-6(2) or RM-9.
- Overall, all three models do an acceptable job of representing this set of 24 shift values.

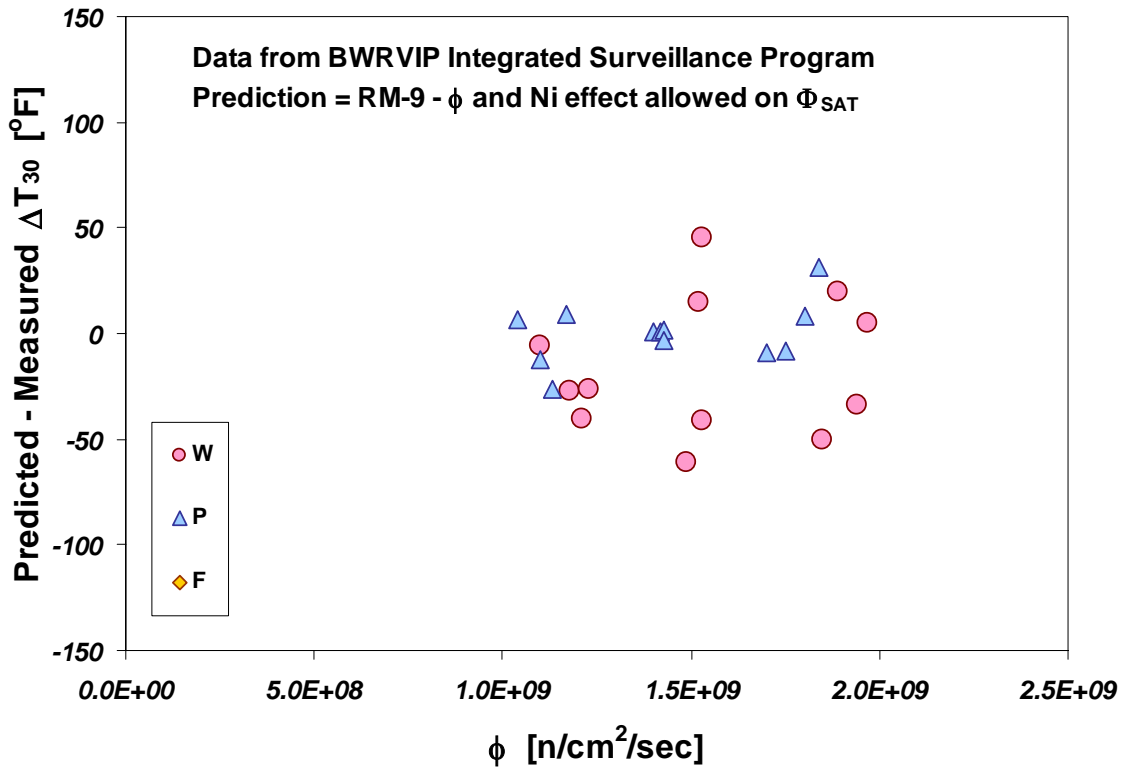
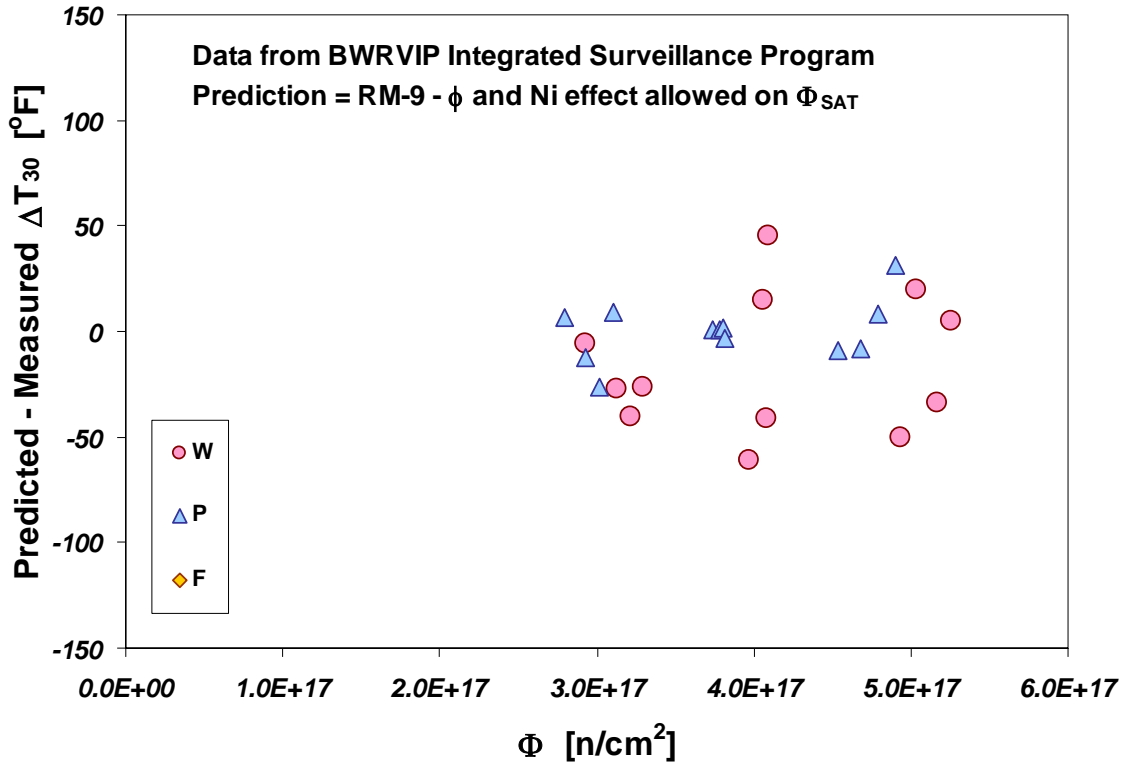
Please let me know if you require any additional information regarding these data.

Heat Code	Capsule	Form	Type	Fluence	Flux	T, deg. F	T, deg C	Si	Mn	P	Ni	Cu	DT - deg C
C3278-2	A	P	CEP	3.740E+17	1.400E+09	527	275.0	0.23	1.43	0.013	0.61	0.11	16.61
P2130-2	A	P	CEP	3.780E+17	1.420E+09	527	275.0	0.17	1.16	0.018	0.584	0.172	22.33
A1224-1	A	P	P	3.800E+17	1.430E+09	527	275.0	0.28	1.375	0.012	0.65	0.03	11.78
C2331-2	A	P	CEP	3.820E+17	1.430E+09	527	275.0	0.24	1.41	0.014	0.62	0.16	23.06
406L44	A	W	L80	3.970E+17	1.490E+09	527	275.0	0.47	1.575	0.016	0.69	0.29	67.72
AP2-21	A	W	ESW	4.060E+17	1.520E+09	527	275.0	0.13	1.485	0.015	0.24	0.11	7.06
34B009	A	W	L1092	4.080E+17	1.530E+09	527	275.0	0.17	1.33	0.019	1.05	0.2	55.00
5P6214B	A	W	L124	4.090E+17	1.530E+09	527	275.0	0.43	1.33	0.012	0.9	0.01	-14.67
C3278-2	B	P	CEP	4.540E+17	1.700E+09	527	275.0	0.23	1.43	0.013	0.61	0.11	23.83
P2130-2	B	P	CEP	4.680E+17	1.750E+09	527	275.0	0.17	1.16	0.018	0.584	0.172	29.67
C2331-2	B	P	CEP	4.790E+17	1.800E+09	527	275.0	0.24	1.41	0.014	0.62	0.16	19.28
A1224-1	B	P	P	4.900E+17	1.840E+09	527	275.0	0.28	1.375	0.012	0.65	0.03	-3.78
406L44	B	W	L80	4.930E+17	1.850E+09	527	275.0	0.47	1.575	0.016	0.69	0.29	67.00
BP2-21	B	W	ESW	5.040E+17	1.890E+09	527	275.0	0.13	1.485	0.015	0.24	0.11	6.22
34B009	B	W	L1092	5.170E+17	1.940E+09	527	275.0	0.17	1.33	0.019	1.05	0.2	55.89
5P6214B	B	W	L124	5.260E+17	1.970E+09	527	275.0	0.43	1.33	0.012	0.9	0.01	8.72
A1195-1	C	P	SRM	2.790E+17	1.040E+09	527	275.0	0.225	1.478	0.011	0.64	0.17	13.94
A0610-1	C	P	P	2.930E+17	1.100E+09	527	275.0	0.19	1.315	0.015	0.52	0.17	25.56
C1079-1	C	P	CEP	3.020E+17	1.130E+09	527	275.0	0.22	1.37	0.018	0.51	0.22	36.33
C3985-2	C	P	CEP	3.110E+17	1.170E+09	527	275.0	0.27	1.42	0.015	0.6	0.11	11.39
5P6756	C	W	L124	2.930E+17	1.100E+09	527	275.0	0.4	1.32	0.009	0.93	0.059	13.11
CP2-6	C	W		3.130E+17	1.180E+09	527	275.0	0.28	1.29	0.016	0.06	0.27	32.39
CP2-BW	C	W	L80	3.220E+17	1.210E+09	527	275.0	0.53	1.54	0.014	0.56	0.26	47.50
20291	C	W	L1092	3.290E+17	1.230E+09	527	275.0	0.24	1.36	0.014	0.75	0.23	40.56

Model RM-6(2)



Model RM-9



Model Eason 2006 (Chapter 7)

