

Designated Original

Duke Energy Corporation Oconee 1, 2, 3
Entergy Operations, Inc. ANO-1
Progress Energy, Florida Crystal River 3



AmerGen Energy Company, LLC TMI-1
FirstEnergy Nuclear Operating Company D-B
Framatome ANP, Inc. (FANP)

Working Together to Economically Provide Reliable and Safe Electrical Power

Proj-693

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Washington, D.C. 20555-0001

Request for Review and Approval of BAW-1543(NP), Revision 4, Supplement 6, "Supplement to the Master Integrated Reactor Vessel Surveillance Program"

On behalf of the B&W Owners Group Reactor Vessel Working Group, Framatome ANP, Inc. (FANP) requests the NRC's review and approval for referencing in licensing actions the topical report BAW-1543(NP), Revision 4, Supplement 6, "Supplement to the Master Integrated Reactor Vessel Surveillance Program."

This supplement addresses the adjustment of the withdrawal schedule of the remaining capsules to provide irradiated material corresponding to reactor vessel fluences for the Westinghouse designed NSSS reactor vessels between one and two times the 60 year fluence.

A CD is enclosed that contains a non-proprietary copy of BAW-1543(NP), Revision 4, Supplement 6.

We will appreciate your timely review.

Sincerely,

Ronnie L. Gardner, Manager
FANP Site Operations and Regulatory Affairs

Howard Crawford, Chairman
B&W Owners Group Steering Committee

Enclosure

cc: G.S. Shukla
Project 693

*CD Unavailable...
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5/13/07*

Add: Sean Peters

Framatome ANP, Inc. B&W Owners Group
3315 Old Forest Road
Lynchburg, VA 24501
Phone: 434-832-3635 Fax: 434-832-4121

D.045

BAW-1543(NP), Revision 4, Supplement 6

December 2005

The B&W
Owners Group

Reactor Vessel Working Group

**SUPPLEMENT
TO THE
MASTER INTEGRATED
REACTOR VESSEL
SURVEILLANCE PROGRAM**

by
J. B. Hall

Prepared for

B&W Owners Group
Reactor Vessel Working Group

Dominion Resources
Duke Energy Corporation
Entergy Operations, Inc.
Exelon Nuclear Corporation
FirstEnergy Nuclear Operating Company
Florida Power Corporation
Nuclear Management Company

FRAMATOME ANP, INC.


AREVA

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Nuclear Management Company

Prepared by

Framatome ANP, Inc.
An AREVA and Siemens Company
3315 Old Forest Road
P. O. Box 10935
Lynchburg, Virginia 24506-0935



SUMMARY

The Master Integrated Reactor Vessel Surveillance Program (MIRVP) was initiated in 1977 for the B&W 177-FA Plants. Its purpose was to augment the existing reactor vessel surveillance programs and to provide a basis for sharing information between plants. All of the early vintage B&W manufactured reactor vessels were fabricated using the submerged arc welding process and particular consumables which resulted in welds that are sensitive to fast neutron exposures. The welds in these early vintage B&W manufactured reactor vessels are referred to as the Linde 80 class of materials. In 1988, the MIRVP was further modified to include a series of plants with the Westinghouse Nuclear Steam Supply System (NSSS) for which B&W manufactured the reactor vessels. These vessels have virtually identical welds as were used in the B&W 177-FA plants. The overall objective of the MIRVP is to provide the data necessary to assure compliance with Federal Regulations.^(a) Individual B&W Owners Group Reactor Vessel Working Group members may cite this document, as needed, in support of their reactor vessel surveillance program, which must meet the requirements of 10 CFR 50 Appendix H.

This document is a supplement to the base document, "Master Integrated Reactor Vessel Surveillance Program," BAW-1543.^(b) Both the base document and the current supplement are used to document the progress of the MIRVP, especially the withdrawal schedule of the RVSP capsules. The last full revision to the base document reviewed and approved by the NRC is Revision 4.^(c) This document is being revised to adjust the withdrawal schedule of the remaining 4 capsules to provide irradiated material corresponding to reactor vessel fluences for the Westinghouse designed NSSS reactor vessels between 1 and 2 times the 60 year fluence. The last supplement to this document reviewed and approved by the NRC is BAW-1543A, Revision 4, Supplement 5.^(d) At the end of 2005, the B&W Owners Group ceases to exist, however the MIRVP will be continued under the Westinghouse Owners Group B&W MIRVP project.

^(a) Title 10, Code of Federal Regulations, Part 50, "Domestic Licensing of Production and Utilization Facilities", Vol. II, U.S. Nuclear Regulatory Commission, Washington, D.C.

^(b) L.S. Harbison, "Master Integrated Reactor Vessel Surveillance Program," BAW-1543, Revision 4, B&W Nuclear Technologies, Inc., Lynchburg, Virginia, February 1993.

^(c) Nuclear Regulatory Commission Safety Evaluation Report, "Babcock & Wilcox Owners Group (B&WOG) Reactor Vessel Working Group Report," BAW-1543, Revision 4, Supplement 2, "Supplement to the Master Integrated Reactor Vessel Surveillance Program" (TAC No. M98089), July 11, 1997.

^(d) Nuclear Regulatory Commission Safety Evaluation Report, "Final Safety Evaluation for B&WOG Topical Report BAW-1543(NP), Revision 4, Supplement 5, "Supplement to the Master Integrated Reactor Vessel Surveillance Program," (TAC No. MC1762), May 16, 2005.

SUMMARY OF REVISIONS

Section	Description
Summary	Updated to reflect current revision.
Section 1	Included revision statement for Supplement 6 changes. References to changes made in Supplement 5 were deleted. Descriptions of Supplement 6 changes were added.
Table III	Updated status of capsules OC2-D, CR3-E, and TMI2-LG2. Changed “End of Seventeenth Fuel Cycle” to “End of Twenty-ninth Fuel Cycle” for capsules A2 and A4. Changed note (a) 2 from “B&WOG” to “capsule owner.”
Table IV	Updated status of capsules RS1-A, RS1-E, RS1-C, and DB1-LG2. Changed “End of Seventeenth Fuel Cycle” to “Withdrawal Not Planned” for capsules A1 and L2. Changed footnote (a) 4, which now refers to A1 as a standby capsule. Footnote (e) was added for TE1-C.
Table VI	Updated status of capsules OC2-D and CR3-E. Fluence values were revised for CR3-A, TE1-C and TE1-E. Footnote (f) was added for TE1-C. Changed status of capsules TMI2-LG2 and DB1-LG2 to “Tested.” Changed Time of Removal from “End of Cycle 17” to “End of Cycle 29” for capsules A2 and A4 and updated the target and expected fluence. A1 and L2 were changed to standby capsules.
References	References 80 and 81 were added.

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1.0 INTRODUCTION

The B&W Owners Group (B&WOG) document, BAW-1543, Revision 4, reports the essential features of a Master Integrated Reactor Vessel Surveillance Program (MIRVP) for all operating B&W 177-FA plants and those Westinghouse-designed plants having B&W-fabricated reactor vessels.⁽¹⁾ This supplementary document to BAW-1543, Revision 4, contains surveillance capsule insertion and withdrawal schedules for the B&W 177-FA plants and the Westinghouse-designed plants participating in the B&WOG Reactor Vessel Working Group (RVWG). In addition, the insertion and withdrawal schedules for the B&WOG supplementary capsules are provided. This document, Supplement 6, is a revision to and replaces Supplement 5-A in its entirety.

Table I and Table II are listings of plant-specific surveillance capsules and direct the reader to the appendices of BAW-1543, Revision 4, where additional information can be found on material and capsule specifications. These tables also provide a listing of surveillance capsule reports. Table I provides information for the B&W plant-specific capsules and Table II provides information for the Westinghouse plant-specific capsules.

Table III and Table IV provide capsule insertion and withdrawal schedules for B&W host plants Crystal River Unit 3 and Davis-Besse, respectively. Table III was revised by changing the withdrawal time of capsules L2, A1, A2, and A4. A1 has been reclassified as a standby capsule. The status of capsules TMI2-LG2 and DB1-LG2 have been updated to reflect that they have been tested.

Table V provides capsule insertion and withdrawal schedules for the Westinghouse-designed plants participating in the RVWG. The Westinghouse-designed plant withdrawal schedules listed in Table V are not MIRVP commitments, but merely reflect the current plan of these RVWG member plants.

Table VI and Table VII summarize the status of all MIRVP capsules for B&W and Westinghouse-designed plants, respectively. These tables state whether the capsules have been withdrawn or are still being irradiated. For capsules that have been withdrawn and tested, the appropriate surveillance capsule report number has been listed. For those capsules that are being irradiated, the target and expected fluences are listed along with the insertion and/or withdrawal date. The Westinghouse-designed plant withdrawal schedules listed in Table VII are not MIRVP commitments, but merely reflect the current plan of these RVWG member plants. Table VI was revised by changing the estimated fluence for CR3-A, TE1-C and TE1-E. TE1-C is slated for disposal; however it will likely be tested since it contains the Davis-Besse limiting material and has a fluence between 1 and 2 times Davis-Besse's 60 year projection. The status of tested capsules TMI2-LG2 and DB1-LG2 was updated. The time of withdrawal and target fluence of capsules

A2 and A4 was changed to the end of cycle 29 to provide irradiated material at a fluence between 1 and 2 times the 60 year fluence for the Westinghouse NSSS design reactor vessels. A1 and L2 were reclassified as standby capsules, since the materials are duplicates of those contained in capsule A4.

Table VIII shows the conformance of the RVWG member plant-specific surveillance programs to the requirements of ASTM E 185-82.⁽⁴⁾

Table IX lists licensing dates and anticipated reactor vessel peak end-of-license fluences.

**Table I. B&W 177-FA Plant-Specific Reactor Vessel
Surveillance Program - Detailed Summary**

Capsule	Type	Table of Material Specifications ^(a)	Table of Capsule Specifications ^(b)	Irradiation Site	Report Date	Report
Oconee Unit 1 Topical Report BAW-10006A, Revision 3 ⁽⁵⁾						
A	I	A-1	D-1	OC1/CR3	Aug. 84	BAW-1837 ⁽⁶⁾
B	II	A-1	D-1	OC1/CR3	-----	-----
C	I	A-1	D-1	OC1/CR3	Oct. 88	BAW-2050 ⁽⁷⁾
D	II	A-1	D-1	OC1/CR3	-----	-----
E	I	A-1	D-1	OC1	Sept. 77	BAW-1436 ⁽⁸⁾
F	II	A-1	D-1	OC1	Sept. 75	BAW-1421, Rev. 1 ⁽⁹⁾
Oconee Unit 2 Topical Report BAW-10006A, Revision 3						
A	I	A-2	D-2	OC2/CR3	Dec. 81	BAW-1699 ⁽¹⁰⁾
B	II	A-2	D-2	OC2/CR3	-----	-----
C	I	A-2	D-2	OC2	May 77	BAW-1437 ⁽¹¹⁾
D	II	A-2	D-2	OC2/CR3	-----	-----
E	I	A-2	D-2	OC2/CR3	Oct. 88	BAW-2051 ⁽¹²⁾
F	II	A-2	D-2	OC2/CR3	-----	-----
Oconee Unit 3 Topical Report BAW-10100A ^{(c)(13)}						
A	V	A-3	D-3	OC3	Jul. 77	BAW-1438 ⁽¹⁴⁾
B	VI	A-3	D-3	OC3/CR3	Oct. 81	BAW-1697 ⁽¹⁵⁾
C	V	A-3	D-3	OC3/CR3	-----	-----
D	VI	A-3	D-3	OC3/CR3	May 92	BAW-2128, Rev. 1 ⁽¹⁶⁾
E	V	A-3	D-3	OC3/CR3	-----	-----
F	VI	A-3	D-3	OC3/CR3	-----	-----
Three Mile Island Unit 1 Topical Report BAW-10006A, Revision 3						
A	I	A-4	D-4	TMI1/TMI2	----- ^(d)	BAW-2042 ⁽¹⁷⁾
B	II	A-4	D-4	TMI1/CR3	-----	-----
C	I	A-4	D-4	TMI1/CR3	Mar. 86	BAW-1901 ⁽¹⁸⁾
D	II	A-4	D-4	TMI1/CR3	-----	-----
E	I	A-4	D-4	TMI1	Jan. 77	BAW-1439 ⁽¹⁹⁾
F	II	A-4	D-4	TMI1/CR3	-----	-----

^(a) Refer to BAW-1543, Revision 4, Appendix A.

^(b) Refer to BAW-1543, Revision 4, Appendix D.

^(c) The Oconee Unit 3 capsules were fabricated before BAW-10100A was published; however, it is the Oconee Unit 3 program that is described in BAW-10100A.

^(d) Capsule used for Three Mile Island Unit 2 capsule requalification.

**Table I (cont'd). B&W 177-FA Plant-Specific Reactor Vessel
Surveillance Program - Detailed Summary**

Capsule	Type	Table of Material Specifications ^(a)	Table of Capsule Specifications ^(b)	Irradiation Site	Report Date	Report
Crystal River Unit 3 Topical Report BAW-10100A						
A	III	A-5	D-5	CR3	-----	-----
B	IV	A-5	D-5	CR3	Jun. 82	BAW-1679, Rev. 1 ⁽²⁰⁾
					Mar. 82	BAW-1718 ⁽²¹⁾
C	III	A-5	D-5	CR3	Mar. 86	BAW-1898 ⁽²²⁾
D	IV	A-5	D-5	CR3	Mar. 86	BAW-1899 ⁽²³⁾
					Apr. 86	BAW-1914 ⁽²⁴⁾
E	III	A-5	D-5	CR3	-----	-----
F	IV	A-5	D-5	CR3	Sept. 88	BAW-2049 ⁽²⁵⁾
					Oct. 93	BAW-2172 ⁽²⁶⁾
Arkansas Nuclear One Unit 1 Topical Report BAW-10006A, Revision 3						
A	I	A-6	D-6	ANO1/DB1	Jul. 84	BAW-1836 ⁽²⁷⁾
B	II	A-6	D-6	ANO1/DB1	Nov. 81	BAW-1698 ⁽²⁸⁾
C	I	A-6	D-6	ANO1/DB1	Oct. 89	BAW-2075, Rev. 1 ⁽²⁹⁾
D	II	A-6	D-6	ANO1/DB1	-----	-----
E	I	A-6	D-6	ANO1	Apr. 77	BAW-1440 ⁽³⁰⁾
F	II	A-6	D-6	ANO1/DB1	-----	-----
Davis-Besse Topical Report BAW-10100A						
A	III	A-8	D-8	DB1	Jun. 89	BAW-1882, Rev. 1 ⁽³¹⁾
B	IV	A-8	D-8	DB1	May 84	BAW-1834 ⁽³²⁾
					Jun. 85	BAW-1867 ⁽³³⁾
C	III	A-8	D-8	DB1	-----	-----
D	IV	A-8	D-8	DB1	Dec. 90	BAW-2125 ⁽³⁴⁾
					Oct. 93	BAW-2208 ⁽³⁵⁾
E	III	A-8	D-8	DB1	-----	-----
F	IV	A-8	D-8	DB1	Jan. 82	BAW-1701 ⁽³⁶⁾
					Mar. 82	BAW-1719 ⁽³⁷⁾

^(a) Refer to BAW-1543, Revision 4, Appendix A.

^(b) Refer to BAW-1543, Revision 4, Appendix D.

**Table II. Westinghouse Plant-Specific Reactor Vessel
Surveillance Program - Detailed Summary**

Capsule	Type	Table of Material Specifications ^(a)	Table of Capsule Specifications ^(b)	Report Date	Report
Point Beach Unit 1 WCAP-7513⁽³⁸⁾					
N	IV	A-10	D-10	----	----
P	IV	A-10	D-10	----	----
R	III	A-10	D-10	Aug. 78	WCAP-9357 ⁽³⁹⁾
S	IV	A-10	D-10	Nov. 76	WCAP-8739 ⁽⁴⁰⁾
T	III	A-10	D-10	Dec. 84	WCAP-10736 ⁽⁴¹⁾
V	III	A-10	D-10	Jun. 73	BCL Report ⁽⁴²⁾
Point Beach Unit 2 WCAP-7712⁽⁴³⁾					
N	IV	A-11	D-11	----	----
P	IV	A-11	D-11	----	----
R	V	A-11	D-11	Dec. 79	WCAP-9635 ⁽⁴⁴⁾
S	V	A-11	D-11	Aug. 91	BAW-2140 ⁽⁴⁵⁾
T	IV	A-11	D-11	Aug. 78	WCAP-9331 ⁽⁴⁶⁾
V	V	A-11	D-11	Jun. 75	BCL Report ⁽⁴⁷⁾
Suppl.	Suppl.	(c)	(c)	Jan. 03	ATI -021-030-2003-1 ⁽⁷⁶⁾
Surry Unit 1 WCAP-7723⁽⁴⁸⁾					
S	VI	A-12	D-12	----	----
T	VII	A-12	D-12	Jun. 75	BCL Report ⁽⁴⁹⁾
U	VI	A-12	D-12	----	----
V	VII	A-12	D-12	Feb. 87	WCAP-11415 ⁽⁵⁰⁾
W	VI	A-12	D-12	Mar. 79	BCL-585-8R ⁽⁵¹⁾
X	VII	A-12	D-12	Apr. 98	BAW-2324 ⁽⁵²⁾
Y	VI	A-12	D-12	----	----
Z	VII	A-12	D-12	----	----

^(a) Refer to BAW-1543, Revision 4, Appendix A.

^(b) Refer to BAW-1543, Revision 4, Appendix D.

^(c) This Westinghouse designed capsule contains Charpy, compact fracture toughness and tensile specimens fabricated from Linde 80 welds SA-1101 (Heat 71249), WF-67 (Heat 72442), and WF-182-1 (Heat 821T44).

**Table II (cont'd). Westinghouse Plant-Specific Reactor Vessel
Surveillance Program - Detailed Summary**

Capsule	Type	Table of Material Specifications ^(a)	Table of Capsule Specifications ^(b)	Report Date	Report
Surry Unit 2 WCAP-8085 ⁽⁵³⁾					
S	VIII	A-13	D-13	Dec. 96	WCAP-14810 ⁽⁵⁴⁾
T	VIII	A-13	D-13	----	----
U	VIII	A-13	D-13	----	----
V	VIII	A-13	D-13	Jun. 87	WCAP-11499 ⁽⁵⁵⁾
W	VIII	A-13	D-13	Feb. 81	BCL-585-026 ⁽⁵⁶⁾
X	VIII	A-13	D-13	Sept. 75	BCL Report ⁽⁵⁷⁾
Y	IX	A-13	D-13	Feb. 03	WCAP-16001 ⁽⁷⁹⁾
Z	IX	A-13	D-13	----	----
Turkey Point Unit 3 WCAP-7656 ⁽⁵⁸⁾					
S	VI	A-14	D-14	May 79	SwRI-02-5131 ⁽⁵⁹⁾
T	VII	A-14	D-14	Dec. 75	WCAP-8631 ⁽⁶⁰⁾
U	VI	A-14	D-14	----	----
V	VII	A-14	D-14	Aug. 86	SwRI-06-8575 ⁽⁶¹⁾
W	VI	A-14	D-14	----	----
X	VII	A-14	D-14	Sept. 02	WCAP-15916 ⁽⁷⁵⁾
Y	VI	A-14	D-14	----	----
Z	VI	A-14	D-14	----	----
Turkey Point Unit 4 WCAP-7660 ⁽⁶²⁾					
S	VI	A-15	D-15	May 79	SwRI-02-5380 ⁽⁵⁹⁾
T	VII	A-15	D-15	Jun. 76	SwRI-02-4221 ⁽⁶³⁾
U	VI	A-15	D-15	----	----
V	VII	A-15	D-15	----	----
W	VI	A-15	D-15	----	----
X	VII	A-15	D-15	----	----
Y	VI	A-15	D-15	----	----
Z	VI	A-15	D-15	----	----

^(a) Refer to BAW-1543, Revision 4, Appendix A.

^(b) Refer to BAW-1543, Revision 4, Appendix D.

**Table III. Capsule Insertion and Withdrawal Schedule
for Crystal River Unit 3**

Holder Tube	Location in Holder Tube	Insert	Withdraw	Capsule Status ^(a)
Installed at Initial Fuel Load				
XW	Top	CR3-B (WC ^(b))		
XW	Bottom	CR3-D (WC)		
End of First Fuel Cycle (1A)				
WZ	Top	CR3-LG1 (WC)		
WZ	Bottom	CR3-LG2 (WC)		
ZY	Top	CR3-C (W ^(c))		
ZY	Bottom	CR3-A (W)		
YZ	Top	OC2-A (W)		
YZ	Bottom	OC1-A (W)		
YX	Top	OC2-E (W)		
YX	Bottom	OC3-D (W)		
XW	Top	CR3-E (W)	CR3-B (WC)	Tested
WX	Top	OC3-B (W)		
WX	Bottom	CR3-F (WC)		
End of First Fuel Cycle (1B)				
No changes.				
End of Second Fuel Cycle				
YZ	Top	OC1-C (W)	OC2-A (W)	Tested
WX	Top	TMI1-C (W)	OC3-B (W)	Tested
End of Third Fuel Cycle				
No changes.				
End of Fourth Fuel Cycle				
YZ	Bottom	OC1-B	OC1-A (W)	Tested
WZ	Top	None	CR3-LG1 (WC)	Tested
WZ	Bottom	None	CR3-LG2 (WC) (WZ now empty)	Tested

**Table III (cont'd). Capsule Insertion and Withdrawal Schedule
for Crystal River Unit 3**

Holder Tube	Location in Holder Tube	Insert	Withdraw	Capsule Status ^(a)
End of Fifth Fuel Cycle				
WX	Top	OC3-C (W)	TMI1-C (W)	Tested
XW	Bottom	TMI1-B	CR3-D (WC)	Tested
ZY	Top	OC3-F (W)	CR3-C (W)	Tested
WZ	Top	OC2-B	None	
WZ	Bottom	CR3-LG2 (WC) (WZ no longer empty)	None	
End of Sixth Fuel Cycle				
YX	Top	TMI2-D ^(d)	OC2-E (W)	Tested
WX	Bottom	TMI1-F	CR3-F (WC)	Tested
YZ	Top	TMI2-LG1 (WC)	OC1-C (W)	Tested
YZ	Bottom	TMI2-LG2 (WC)	OC1-B	1
End of Seventh Fuel Cycle				
XW	Bottom	TMI2-D ^(d) from YX top	TMI1-B	1
YX	Top	A2 (WC)	TMI2-D ^(d) to XW bottom	---
YX	Bottom	A4 (WC)	OC3-D (W)	Tested
WZ	Top	OC3-E (W)	OC2-B	1
End of Eighth Fuel Cycle				
ZY	Bottom	OC1-D	CR3-A (W)	2
XW	Top	None	CR3-E (W)	1
XW	Bottom	None	TMI2-D ^(d) (XW now empty)	---
WX	Top	OC2-F	OC3-C (W)	2
WX	Bottom	TMI1-D	TMI1-F	1
End of Ninth Fuel Cycle				
YZ	Top	OC2-D	TMI2-LG1 (WC)	Tested
WZ	Bottom	TMI2-D ^(d)	CR3-LG2 (WC)	Tested
End of Tenth Fuel Cycle				
No changes.				
End of Eleventh Fuel Cycle				
WX	Top	None	OC2-F	2
WX	Bottom	None	TMI1-D (WX now empty)	2

**Table III (cont'd). Capsule Insertion and Withdrawal Schedule
for Crystal River Unit 3**

Holder Tube	Location in Holder Tube	Insert	Withdraw	Capsule Status ^(a)
End of Twelfth Fuel Cycle				
YZ	Top	None	OC2-D	1
YZ	Bottom	None	TMI2-LG2 (WC) (YZ now empty)	Tested
WZ	Top	None	OC3-E (W)	2
WZ	Bottom	None	TMI2-D ^(d) (WZ now empty)	2
End of Thirteenth through Sixteenth Fuel Cycles				
No changes.				
End of Twenty-ninth Fuel Cycle				
YX	Top	None	A2 (WC)	4
YX	Bottom	None	A4 (WC) (YX now empty)	4
Withdrawal Not Planned				
ZY	Top	None	OC3-F (W)	2
ZY	Bottom	None	OC1-D	2

- (a) 1 = Capsule has been disposed of in accordance with Reference 2.
 2 = Capsule will be disposed of in accordance with Reference 2 at the convenience of the capsule owner.
 3 = Capsule removed, specimens will be tested, dosimetry evaluated, and thermal monitors evaluated.
 4 = Capsule to be removed, specimens will be tested, dosimetry evaluated, and thermal monitors evaluated.
- (b) (WC) = Capsule contains weld metal and compact fracture toughness specimens.
 (c) (W) = Capsule contains weld metal specimens.
 (d) Dummy capsule.

**Table IV. Capsule Insertion and Withdrawal Schedule
for Davis-Besse**

Holder Tube	Location in Holder Tube	Insert	Withdraw	Capsule Status ^(a)
Installed at Initial Fuel Load				
WZ	Top	AN1-B		
WZ	Bottom	RS1-B (WC ^(b))		
ZY	Top	TE1-B (WC)		
ZY	Bottom	TE1-F (WC)		
YZ	Top	AN1-A (W ^(c))		
YZ	Bottom	AN1-C (W)		
YX	Top	RS1-D (WC)		
YX	Bottom	TE1-C (W)		
XW	Top	TE1-D (WC)		
XW	Bottom	RS1-C (W)		
WX	Top	TE1-A (W)		
WX	Bottom	RS1-F (WC)		
End of First Fuel Cycle				
WZ	Top	DB1-LG1 (WC)	AN1-B	Tested
WZ	Bottom	RS1-E (W)	RS1-B (WC)	Tested
ZY	Bottom	DB1-LG2 (WC)	TE1-F (WC)	Tested
End of Second Fuel Cycle				
YX	Top	RS1-A (W)	RS1-D (WC)	Tested
End of Third Fuel Cycle				
YZ	Top	AN1-D	AN1-A (W)	Tested
ZY	Top	TE1-E (W)	TE1-B (WC)	Tested
End of Fourth Fuel Cycle				
YX	Top	AN1-F	RS1-A (W)	1
WZ	Top	RS1-F from WX bottom	DB1-LG1 (WC)	Tested
WX	Top	None	TE1-A (W)	Tested
WX	Bottom	None	RS1-F to WZ top (WX now empty)	---
End of Fifth Fuel Cycle				
WZ	Top	None	RS1-F (WC)	Tested
WZ	Bottom	None	RS1-E (W) (WZ now empty)	1
YZ	Top	TMI2-C ^(d)	AN1-D to XW bottom	---
YZ	Bottom	TMI2-E ^(d)	AN1-C (W)	Tested
XW	Bottom	AN1-D from YZ top	RS1-C (W)	1

**Table IV (cont'd). Capsule Insertion and Withdrawal Schedule
for Davis-Besse**

Holder Tube	Location in Holder Tube	Insert	Withdraw	Capsule Status ^(a)
End of Sixth Fuel Cycle				
XW	Top	None	TE1-D (WC)	Tested 1
XW	Bottom	None	AN1-D (XW now empty)	
YZ	Top	A3 (WC)	TMI2-C ^(d) TMI2-E ^(d)	---
YZ	Bottom	A1 (WC)		---
WZ	Top	L2 (WC)		
WZ	Bottom	L1 (WC)		
End of Seventh Fuel Cycle				
YX	Top	EPRI Capsule ^(d)	AN1-F TE1-C (W)	1 2 ^(e)
YX	Bottom	A5		
WX	Top	IBSP-2 ^(d)		
WX	Bottom	IBSP-1 ^(d) (WX no longer empty)		
End of Eighth through Tenth Fuel Cycles				
No changes.				
End of Eleventh Fuel Cycle				
ZY	Top	None	TE1-E (W)	2 Tested
ZY	Bottom	None	DB1-LG2 (WC) (ZY now empty)	
YX	Top	None	EPRI Capsule ^(d) A5 (WC) (YX now empty)	---
YX	Bottom	None		Tested
End of Twelfth Fuel Cycle				
YZ	Top	Dummy-L2 (WC)	A3 (WC)	Tested ---
WZ	Top	None	L2 (WC) to YZ top	
WZ	Bottom	None	L1 (WC) (WZ now empty)	Tested
WX	Top	None	IBSP-2 ^(d) IBSP-1 ^(d) (WX now empty)	---
WX	Bottom	None		---
End of Thirteenth through Sixteenth Fuel Cycles				
No changes.				

Table IV (cont'd). Capsule Insertion and Withdrawal Schedule for Davis-Besse

Holder Tube	Location in Holder Tube	Insert	Withdraw	Capsule Status ^(a)
Withdrawal Not Planned				
YZ	Top	None	Dummy-L2 (WC)	2, 4
YZ	Bottom	None	A1 (WC) (all holder tubes empty)	4

- (a) 1 = Capsule has been disposed of in accordance with Reference 2.
 2 = Capsule will be disposed of in accordance with Reference 2 at the convenience of the capsule owner.
 3 = Capsule to be removed, specimens will be tested, dosimetry evaluated, and thermal monitors evaluated.
 4 = Capsule A1 and L2 duplicate the materials contained in capsule A4. A1 is considered a standby capsule.
- (b) (WC) = Capsule contains weld metal and compact fracture toughness specimens.
- (c) (W) = Capsule contains weld metal specimens.
- (d) Not part of the B&WOG MIRVP.
- (e) TE1-C is being held in storage and will likely be tested to support license renewal for Davis Besse.

Table V. Capsule Insertion and Withdrawal Schedule for the Westinghouse Plant-Specific RVSPs

Nuclear Plant	Capsule Location ^(a)	Capsule Identification ^(b)	Insert	Withdraw	Capsule Status ^(c)
Point Beach Unit 1	13°	V (WC)	----	EOC-1	Tested
	13°	R (WC)	----	EOC-5	Tested
	23°	T (WC)	----	EOC-11	Tested
	33°	S (W)	----	EOC-3	Tested
	23°	P (W)	----	EOC-21	Removed/Stored
	33°	N (W)	----	EOL	2, 4, 5
Point Beach Unit 2	13°	V (WC)	----	EOC-1	Tested
	13°	R (WC)	----	EOC-5	Tested
	23°	T (W)	----	EOC-3	Tested
	33°	S (WC)	----	EOC-16	Tested
	23°	P (W)	----	EOC-22	Removed/Stored
	33°	N (W)	----	EOL	2, 4, 5
	13°	Suppl. (W)	EOC-25	EOC-33	1
Surry Unit 1	15°	T (WC)	----	EOC-1	Tested
	15°	V (WC)	----	EOC-8	Tested
	35°	W	----	EOC-4	Tested ^(d)
	25°	S	----	EOL	2, 4
	25°	X (WC)	----	EOC-12	----
	15°	X (WC)	EOC-12	EOC-14	Tested
	25°	Z (WC)	----	EOC-12	3a
	15°	Z (WC)	EOC-12	EOL	2, 4, 5
	35°	Y	----	EOC-14	3b
	15°	Y	EOC-14	EOL	4, 5
	45°	U	----	EOC-12	3a
	25°	U	EOC-12	EOL	4, 5
	Surry Unit 2	15°	X (W)	----	EOC-1
15°		V (W)	----	EOC-8	Tested
25°		W (W)	----	EOC-4	Tested ^(d)
25°		Y (WC)	----	EOC-12	----
15°		Y (WC)	EOC-12	EOC-17	Tested
25°		U (W)	----	EOC-22	2, 5
35°		Z (WC)	----	EOC-12	3a
25°		Z (WC)	EOC-12	EOL	4, 5
35°		T (W)	----	EOC-17	3b
15°		T (W)	EOC-17	EOL	4, 5
45°		S (W)	----	EOC-13	6
15°		W1 (WC) ^(e)	EOC-10	EOC-14	Tested

Table V (cont'd). Capsule Insertion and Withdrawal Schedule for the Westinghouse Plant-Specific RVSPs

Nuclear Plant	Capsule Location ^(a)	Capsule Identification ^(b)	Insert	Withdraw	Capsule Status ^(c)
Turkey Point Unit 3	0°	T (WC)	----	EOC-1	Tested
	10°	S	----	EOC-4	Tested
	20°	V (WC)	----	EOC-9	Tested
	0°	X (WC)	----	EOC-21	Tested
	30°	U	----	EOLEx	7
	30°	Y	----	EOLEx	7
	40°	W	----	EOLEx	7
	40°	Z	----	EOLEx	7
Turkey Point Unit 4	0°	T (WC)	----	EOC-1	Tested
	10°	S	----	EOC-3	Tested
	0°	X (WC)	----	EOC-27	1
	20°	V (WC)	----	EOL	8
	30°	U	----	EOLEx	7
	30°	Y	----	EOLEx	7
	40°	W	----	EOLEx	7
	40°	Z	----	EOLEx	7

Notes:

- (a) Capsule locations are relative with regard to quadrant; e.g., 0° is equivalent to 90°, 180°, or 270°.
- (b) W = Capsule contains weld metal specimens.
WC = Capsule contains weld metal and WOL specimens.
- (c) 1 = Capsule to be removed, specimens will be tested, dosimetry evaluated, and thermal monitors evaluated.
2 = Capsule to be removed and placed in storage. Dosimetry may be evaluated at this time.
3a = Capsule reinserted in higher lead factor location.
3b = Capsule to be reinserted in higher lead factor location.
4 = Capsule to be maintained in location to EOL.
5 = Standby capsule to be removed at 1-2 times the vessel EOL fluence.
6 = Capsule was evaluated for dosimetry and placed in storage.
7 = The last capsule will not be withdrawn prior to the 55th year.
8 = Standby EOL capsule, as needed.
- (d) Only dosimetry was evaluated.
- (e) HUPCAP, not a plant-specific capsule.

Table VI. Summary Status of the B&W Surveillance Capsules

Capsule ID	Capsule Contents		Status/ Location	Fluence, n/cm ² (x10 ¹⁹)		Time of Removal	Comments
	Weld Metal	Fracture Toughness Specimens		Target	Expected/Received		
OC1-F	---	---	Tested	----	0.057	----	Reported in BAW-1421, Rev. 1 ⁽⁹⁾ ; fluence corrected in BAW-1436 ⁽⁸⁾
OC1-E	X	---	Tested	----	0.150	----	Reported in BAW-1436 ⁽⁸⁾
OC1-B	---	---	Removed	----	0.700 ^(a)	----	Has been disposed ⁽²⁾
OC1-A	X	---	Tested	----	0.895	----	Reported in BAW-1837 ⁽⁶⁾
OC1-C	X	---	Tested	----	0.986	----	Reported in BAW-2050 ⁽⁷⁾
OC1-D	---	---	CR3-ZY	N/A	1.163 ^(b)	Not Planned	Disposal at convenience of owner ⁽²⁾
OC2-C	X	---	Tested	----	0.102 ^(c)	----	Reported in BAW-1437 ⁽¹¹⁾
OC2-A	X	---	Tested	----	0.337	----	Reported in BAW-1699 ⁽¹⁰⁾
OC2-B	---	---	Removed	----	0.562 ^(d)	----	Has been disposed ⁽²⁾
OC2-E	X	---	Tested	----	1.210	----	Reported in BAW-2051 ⁽¹²⁾
OC2-D	---	---	Removed	----	0.803 ^(b)	----	Has been disposed ⁽²⁾
OC2-F	---	---	Removed	----	0.803 ^(b)	----	Will be disposed ⁽²⁾
OC3-A	X	---	Tested	----	0.081 ^(c)	----	Reported in BAW-1438 ⁽¹⁴⁾
OC3-B	X	---	Tested	----	0.312	----	Reported in BAW-1697 ⁽¹⁵⁾
OC3-C	X	---	Removed	----	0.783 ^(b)	----	Will be disposed ⁽²⁾
OC3-D	X	---	Tested	----	1.45	----	Reported in BAW-2128, Rev. 1 ⁽¹⁶⁾
OC3-E	X	---	Removed	----	1.262 ^(b)	----	Will be disposed ⁽²⁾
OC3-F	X	---	CR3-ZY	N/A	1.723 ^(b)	Not Planned	Disposal at convenience of owner ⁽²⁾
TMI1-E	X	---	Tested	----	0.107	----	Reported in BAW-1439 ⁽¹⁹⁾
TMI1-B	---	---	Removed	----	0.444 ^(d)	----	Has been disposed ⁽²⁾
TMI1-C	X	---	Tested	----	0.882 ^(e)	----	Reported in BAW-1901 ⁽¹⁸⁾
TMI1-A	X	---	Removed	----	Unknown	----	Held in storage - reported in BAW-2042 ⁽¹⁷⁾
TMI1-D	---	---	Removed	----	0.816 ^(b)	----	Will be disposed ⁽²⁾
TMI1-F	---	---	Removed	----	0.631 ^(b)	----	Has been disposed ⁽²⁾

Table VI (cont'd). Summary Status of the B&W Surveillance Capsules

Capsule ID	Capsule Contents		Status/ Location	Fluence, n/cm ² (x10 ¹⁹)		Time of Removal	Comments
	Weld Metal	Fracture Toughness Specimens		Target	Expected/Received		
CR3-B	X	X	Tested	----	0.117	----	Reported in BAW-1679, Rev. 1 ⁽²⁰⁾ and BAW-1718 ⁽²¹⁾
CR3-C	X	---	Tested	----	0.656	----	Reported in BAW-1898 ⁽²²⁾
CR3-D	X	X	Tested	----	0.750	----	Reported in BAW-1899 ⁽²³⁾ and BAW-1914 ⁽²⁴⁾
CR3-F	X	X	Tested	----	1.08	----	Reported in BAW-2049 ⁽²⁵⁾ and BAW-2172 ⁽²⁶⁾
CR3-A	X	---	Removed	----	1.23	----	Will be disposed ⁽²⁾
CR3-E	X	---	Removed	----	1.240 ^(b)	----	Has been disposed ⁽²⁾
AN1-E	X	---	Tested	----	0.0727	----	Reported in BAW-1440 ⁽³⁰⁾
AN1-B	---	---	Tested	----	0.428	----	Reported in BAW-1698 ⁽²⁸⁾
AN1-A	X	---	Tested	----	1.03	----	Reported in BAW-1836 ⁽²⁷⁾
AN1-C	X	---	Tested	----	1.46	----	Reported in BAW-2075, Rev. 1 ⁽²⁹⁾
AN1-D	---	---	Removed	----	0.760 ^(d)	----	Has been disposed ⁽²⁾
AN1-F	---	---	Removed	----	0.783 ^(b)	----	Has been disposed ⁽²⁾
TE1-F	X	X	Tested	----	0.196	----	Reported in BAW-1701 ⁽³⁶⁾ and BAW-1719 ⁽³⁷⁾
TE1-B	X	X	Tested	----	0.592	----	Reported in BAW-1834 ⁽³²⁾ and BAW-1867 ⁽³³⁾
TE1-A	X	---	Tested	----	1.29	----	Reported in BAW-1882, Rev. 1 ⁽³¹⁾
TE1-D	X	X	Tested	----	0.962	----	Reported in BAW-2125 ⁽³⁴⁾ and BAW-2208 ⁽³⁵⁾
TE1-C	X	---	Removed	----	1.81	----	Will be disposed ^{(2) (f)}
TE1-E	X	---	Removed	----	0.98	----	Will be disposed ⁽²⁾

Table VI (cont'd). Summary Status of the B&W Surveillance Capsules

Capsule ID	Capsule Contents		Status/ Location	Fluence, n/cm ² (x10 ¹⁹)		Time of Removal	Comments
	Weld Metal	Fracture Toughness Specimens		Target	Expected/Received		
CR3-LG1	X	X	Tested	----	0.500-0.779	----	Reported in BAW-1910P ⁽⁶⁴⁾
CR3-LG2	X	X	Tested	----	1.19-1.95	----	Reported in BAW-2254P ⁽⁶⁵⁾
DB1-LG1	X	X	Tested	----	0.661-1.03	----	Reported in BAW-1920P ⁽⁶⁶⁾
DB1-LG2	X	X	Tested	----	1.10-1.65	----	Reported in BAW-2486 ⁽⁸⁰⁾
TMI2-LG1	X	X	Tested	----	0.585-0.992	----	Reported in BAW-2253P ⁽⁶⁷⁾
TMI2-LG2	X	X	Tested	----	1.17-2.01	----	Reported in BAW-2439 ⁽⁸¹⁾
A1	X	X	DB1-YZ	5.1	5.1	Standby	----
A2	X	X	CR3-YX	6.6	6.6	End of Cycle 29	----
A3	X	X	Tested	----	1.166	----	Reported in BAW-2412 ⁽⁶⁸⁾
A4	X	X	CR3-YX	6.6	6.6	End of Cycle 29	----
A5	X	X	Tested	----	0.637-1.042	----	Reported in BAW-2360P ⁽⁶⁹⁾
L1	X	X	Tested	----	1.26	----	Reported in BAW 2400 ⁽⁷⁰⁾
L2	X	X	DB1-YZ	4.5	4.5	Standby	----

(a) BAW-1543, Revision 3⁽³⁾(b) BAW-2108, Revision 1⁽⁷¹⁾(c) NUREG CR-4816, Volumes 1 & 2⁽⁷²⁾(d) BAW-2108⁽⁷³⁾(e) Fluence revised in 86-5021026-01⁽⁷⁷⁾

(f) TE1-C is being held in storage and will likely be tested to support license renewal for Davis Besse.

Table VII. Summary Status of the Westinghouse Surveillance Capsules

Capsule ID	Capsule Contents		Status/ Location ^(a)	Fluence, n/cm ² (x10 ¹⁹)		Time of Removal	Comments
	Weld Metal	Fracture Toughness Specimens		Target	Expected		
PB1-N	X	X	33°	4.500	4.500	End of Life	Standby
PB1-P	X	---	Removed	----	----	----	Held in Storage
PB1-R	X	X	Tested	----	----	----	Reported in WCAP-9357 ⁽³⁹⁾
PB1-S	X	---	Tested	----	----	----	Reported in WCAP-8739 ⁽⁴⁰⁾
PB1-T	X	X	Tested	----	----	----	Reported in WCAP-10736 ⁽⁴¹⁾
PB1-V	X	X	Tested	----	----	----	Reported in BCL report dated 6/73 ⁽⁴²⁾
Suppl.	X	X	13°	4.988	4.988	End of Cycle 33	Supplemental
PB2-N	X	---	33°	5.000	5.000	End of Life	Standby
PB2-P	X	---	Removed	----	----	----	Held in storage
PB2-R	X	X	Tested	----	----	----	Reported in WCAP-9635 ⁽⁴⁴⁾
PB2-S	X	X	Tested	----	----	----	Reported in BAW-2140 ⁽⁴⁵⁾
PB2-T	X	---	Tested	----	----	----	Reported in WCAP-9331 ⁽⁴⁶⁾
PB2-V	X	X	Tested	----	----	----	Reported on BCL report dated 6/75 ⁽⁴⁷⁾
S1-S	---	---	25°	3.900	3.900	Remain for Lifex	Standby ^(b)
S1-T	X	X	Tested	----	----	----	Reported in BCL reported dated 6/75 ^{(49) (d)}
S1-U	---	---	45°/25°	3.000	3.000	Remain for Lifex	Standby, transferred to 25° at EOC-12
S1-V	X	X	Tested	----	----	----	Reported in WCAP-11415 ^{(50) (d)}
S1-W	---	---	Dosimetry	----	----	----	Reported in BCL-585-8R ⁽⁵¹⁾
S1-X	X	X	Tested	----	----	----	Reported in BAW-2324 ⁽⁵²⁾
S1-Y	---	---	35°	4.300	4.300	Remain for Lifex	Standby, transferred to 15° at EOC-14
S1-Z	X	X	25°/15°	5.200	5.200	End of Life	Standby, transferred to 15° at EOC-12

Table VII (cont'd). Summary Status of the Westinghouse Surveillance Capsules

Capsule ID	Capsule Contents		Status/ Location ^(a)	Fluence, n/cm ² (x10 ¹⁹)		Time of Removal	Comments
	Weld Metal	Fracture Toughness Specimens		Target	Expected		
S2-S	X	---	Dosimetry	----	----	----	Evaluated for dosimetry only. Results reported in WCAP-14810 ⁽⁵⁴⁾
S2-T	X	---	35°	3.800	3.800	End of Life	Standby, transfer to 15° at EOC-17
S2-U	X	---	25°	3.600	3.600	End of Cycle 22	Standby
S2-V	X	---	Tested	----	----	----	Reported in WCAP-11499 ⁽⁵⁵⁾
S2-W	X	---	Dosimetry	----	----	----	Reported in BCL-585-026 ⁽⁵⁶⁾
S2-X	X	---	Tested	----	----	----	Reported in BCL report dated 9/75 ⁽⁵⁷⁾
S2-Y	X	X	Tested	----	----	----	Reported in WCAP-16001 ⁽⁷⁹⁾
S2-Z	X	X	35°/25°	3.400	3.400	Remain for Lifex	Standby, transferred to 25° at EOC-12
S2-W1	X	X	Tested	----	----	----	Reported in BAW-2350P ⁽⁷⁴⁾
TP3-S	---	---	Tested	----	----	----	Reported in SwRI-02-5131 ⁽⁵⁹⁾
TP3-T	X	X	Tested	----	----	----	Reported in WCAP-8631 ⁽⁶⁰⁾
TP3-U	---	---	30°	----	----	End of Lifex	Standby ^(c)
TP3-V	X	X	Tested	----	----	----	Reported in SwRI-06-8575 ⁽⁶¹⁾
TP3-W	---	---	40°	----	----	End of Lifex	Standby ^(c)
TP3-X	X	X	Tested	----	----	----	Reported in WCAP-15916 ⁽⁷⁵⁾
TP3-Y	---	---	30°	----	----	End of Lifex	Standby ^(c)
TP3-Z	---	---	40°	----	----	End of Lifex	Standby ^(c)
TP4-S	---	---	Tested	----	----	----	Reported in SwRI-02-5380 ⁽⁵⁹⁾
TP4-T	X	X	Tested	----	----	----	Reported in SwRI-02-4221 ⁽⁶³⁾
TP4-U	---	---	30°	----	----	End of Lifex	Standby ^(c)
TP4-V	X	X	20°	----	----	End of Life	Standby
TP4-W	---	---	40°	----	----	End of Lifex	Standby ^(c)
TP4-X	X	X	0°	3.850	3.850	End of Cycle 27	Standby
TP4-Y	---	---	30°	----	----	End of Lifex	Standby ^(c)
TP4-Z	---	---	40°	----	----	End of Lifex	Standby ^(c)

^(a) All locations are relative with regard to quadrant; e.g., 0° is equivalent to 90°, 180°, or 270°.

^(b) To be withdrawn at EOC-17 if cavity dosimetry is not installed.

^(c) The last capsule will not be withdrawn prior to the 55th year.

^(d) Fluence revised in 86-5020802-01⁽⁷⁸⁾

Table VIII. Comparison of the Plant-Specific Surveillance Capsules with ASTM E 185 Requirements

Plant	ASTM E 185-82 5 Capsule Program Requirement				
	1.5 EFPY or Fluence > 5E18 $\Delta RT_{NDT} \approx 50^\circ F$	3 EFPY or Fluence Midway Between First and Third Capsule	6 EFPY or T/4 EOL Fluence	15 EFPY or IS EOL Fluence	EOL or 1-2 Times EOL Fluence (Capsule may be held w/o testing)
Oconee-1	F-I/T	(a)	E-I/T	A-I/T	C-I/T
Oconee-2	C-I/T	A-I/T	TM12-LG1-I/T	E-I/T	A5-I/T
Oconee-3	A-I/T	B-I/T	L1-I/T	D-I/T	CR3-LG2-I/T
TMI-1	E-I/T	W1-I/T	CR3-LG1-I/T	C-I/T	TM12-LG2-I/T
Crystal River-3	B-I/T	(a)	C-I/T	D-I/T	F-I/T
ANO-1	E-I/T	(a)	B-I/T	A-I/T	C-I/T
Davis-Besse	F-I/T	(a)	B-I/T	D-I/T	A-I/T
Point Beach-1	V-I/T	S-I/T	T-I/T	R-I/T	P-I/NT
Point Beach-2	V-I/T	T-I/T	R-I/T	S-I/T	P-I/NT
Surry-1	T-I/T	W-I/T ^(b)	V-I/T	X-I/T	S,U-R
Surry-2	X-I/T	W-I/T ^(b)	V-I/T	Y-I/T	S-I/T ^(b) ;T-R
Turkey Point-3	T-I/T	V-I/T	S-I/T	X-I/T	U,W-R
Turkey Point-4	T-I/T	S-I/T	X-R	V-R	U,W-R

Legend: I/T = Irradiated and tested

I/NT = Irradiated and not tested

R = In reactor

^(a) Only 4 capsules required per ASTM E185-82.

^(b) Only dosimetry evaluated.

Table IX. Peak End-of-Life Inside Surface Fluences and Significant Licensing Dates

Plant	Date Construction Permit Issued	Date Operating License Issued	License Expiration	Peak EOL IS Fluence, n/cm ² (E > 1 MeV)
Oconee-1	November 6, 1967	February 6, 1973	February 5, 2033 ^(a)	1.31E+19
Oconee-2	November 6, 1967	October 6, 1973	October 5, 2033 ^(a)	1.28E+19
Oconee-3	November 6, 1967	July 19, 1974	July 18, 2034 ^(a)	1.26E+19
TMI-1	May 18, 1968	April 19, 1974	April 19, 2014	8.16E+18
Crystal River-3	September 25, 1968	December 3, 1976	December 2, 2016	8.03E+18
ANO-1	December 6, 1968	May 21, 1974	May 20, 2034 ^(a)	1.44E+19
Davis-Besse	March 24, 1971	April 22, 1977	April 22, 2017	1.07E+19
Point Beach-1	July 19, 1967	October 5, 1970	October 5, 2010	2.85E+19
Point Beach-2	July 25, 1968	March 8, 1973	January 7, 2013	3.12E+19
Surry-1	June 25, 1968	May 25, 1972	May 24, 2032 ^(a)	5.40E+19
Surry-2	June 25, 1968	January 29, 1973	January 28, 2033 ^(a)	5.34E+19
Turkey Point-3	April 27, 1967	July 19, 1972	July 19, 2032 ^(a)	4.50E+19
Turkey Point-4	April 27, 1967	April 10, 1973	April 10, 2033 ^(a)	4.50E+19

(a) Includes 20 year license renewal term.

2.0 CERTIFICATION

This supplement to BAW-1543, Revision 4, is an accurate description of the capsule irradiation plan for the Master Integrated Reactor Vessel Surveillance Program.

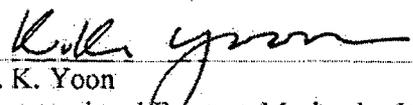


J. B. Hall
Materials and Structural Analysis Unit

12-19-05

Date

This report has been reviewed and is an accurate description of the revised master integrated reactor vessel surveillance program.

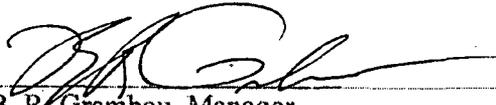


K. K. Yoon
Structural and Fracture Mechanics Unit

12/19/05

Date

Verification of independent review.



B. R. Grambau, Manager
Materials and Structural Analysis Unit

12/19/05

Date

This report has been approved for release.



W. R. Gray
Program Manager

12/20/05

Date

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