



**DUKE POWER COMPANY**  
**NUCLEAR PRODUCTION DEPARTMENT**  
**P.O. BOX 33189, 422 SOUTH CHURCH STREET**  
**CHARLOTTE, N.C. 28242**  
**(704) 373-4011**

January 25, 1988

Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Ms. Reba Diggs

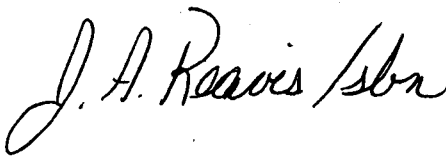
Subject: Oconee Nuclear Station  
Licensee Fees Pursuant to  
10 CFR 170.21

Dear Ms. Diggs:

Please find attached check #18439472 in the amount of \$150.00 to cover fees, per 10 CFR 170.12, associated with our letter of December 15, 1987 concerning the B&WOG Integrated Reactor Vessel Materials Surveillance Program (See Attached Copy of Letter).

Our letter of January 14, 1988 concerning Oconee Nuclear Station's Inservice Testing Program contained check #18332821 to be applied to the fee as set forth in 10 CFR 170.21. If you did not receive this check, please advise.

Sincerely,

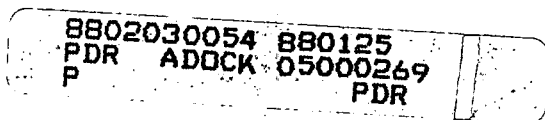


Jerel A. Reavis

JAR/1266/sbn

Attachment

xc: File



M008  
/1  
w/check  
\$150.00

05-801.01

**DUKE POWER COMPANY**

P.O. BOX 33189  
CHARLOTTE, N.C. 28242

TELEPHONE  
(704) 373-4531

**HAL B. TUCKER**  
VICE PRESIDENT  
NUCLEAR PRODUCTION

December 15, 1987

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287

Dear Sir:

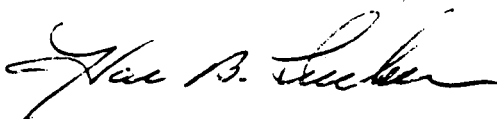
Pursuant to 10 CFR 50, Appendix H, Section II.C, Duke Power Company submits for NRC consideration and approval for Oconee Units 1, 2 and 3, the B&W Owners Group Integrated Reactor Vessel Materials Surveillance Program (Addendum), BAW-1543A, Rev. 2, Addendum 1 dated November 1987.

Oconee Units 1, 2 and 3 are participating in the B&W Owners Group Integrated Reactor Vessel Surveillance program which is documented in B&W Topical Report BAW-1543, Rev. 2 and 2A. The Staff's review of the Topical Report is documented in a March 13, 1986 letter from C. O. Thomas to J. H. Taylor, and specifically for Oconee units in Amendments Nos. 162, 162, and 159 to Facility Operating Licenses DPR-38, DPR-47, and DPR-55 dated October 19, 1987.

The attached addendum 1 to B&W Topical Report BAW-1543A, Rev. 2 has been approved by the NRC and contains the NRC Safety Evaluation Report dated September 18, 1987. This addendum provides a revised insertion and withdrawal schedule for Oconee surveillance capsules in the Crystal River - 3. Revisions in the irradiation schedule were required to accommodate changes in recalculation of neutron exposure of the vessels and capsules. Technical justification and details of these changes are contained in the attached approved addendum 1 to BAW-1543A, Rev. 2.

Pursuant to 10 CFR 170.12, please find enclosed a check in the amount of \$150.00 for application fee.

Very truly yours,



Hal B. Tucker

MAH/1088/sbn

Attachment

~~8712300002 3pp.~~

43542 198

December 15, 1987

Page 3

bxc: P. M. Abraham  
K. S. Canady  
R. C. Futrell  
P. F. Guill  
W. A. Haller  
G. W. Hallman  
C. L. Harlin  
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W. H. McDowell  
P. J. North  
N. A. Rutherford  
File: OS-801.01

U. S. Nuclear Regulatory Commission  
December 15, 1987  
Page 2

xc: Dr. J. Nelson Grace, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Mr. J. C. Bryant  
NRC Resident Inspector  
Oconee Nuclear Station

Mr. Heyward Shealy, Chief  
Bureau of Radiological Health  
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2600 Bull Street  
Columbia, South Carolina 29201

Mr. J. C. Bryant  
NRC Resident Inspector  
Oconee Nuclear Station

BAW-1543A, Rev. 2, Addendum 1  
November 1987

**THE  
B&W OWNERS GROUP**

**MATERIALS COMMITTEE**

**INTEGRATED REACTOR VESSEL MATERIAL  
SURVEILLANCE PROGRAM  
(Addendum)**

~~87 12300004 20pp.~~

**Babcock & Wilcox**  
a McDermott company

BAW-1543A, Rev. 2  
Addendum 1  
November 1987

INTEGRATED REACTOR VESSEL MATERIAL  
SURVEILLANCE PROGRAM  
(ADDENDUM)

by

L. B. Gross

Prepared for

B&W Owners Group Materials Committee  
Arkansas Power & Light Company  
Duke Power Company  
Florida Power Corporation  
GPU Nuclear Corporation  
Sacramento Municipal Utility District  
Toledo Edison Company

B&W Document No. 77-1168618-01  
(See section 3 for document signatures)

Prepared by

BABCOCK & WILCOX  
Nuclear Power Division  
P. O. Box 10935  
Lynchburg, Virginia 24506-0935



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

September 18, 1987

J. H. Taylor  
SEP 25 1987

Mr. J. H. Taylor  
Manager, Licensing Service  
Babcock & Wilcox  
3315 Old Forest Road  
P.O. Box 10935  
Lynchburg, Virginia 24506-0935

SUBJECT: REVIEW OF PROPOSED REVISION TO THE BABCOCK & WILCOX OWNERS GROUP  
INTEGRATED REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM.

The NRC staff has completed its review of the proposed changes to the Babcock & Wilcox Owners Group (BWO) integrated reactor vessel material surveillance program which was submitted in letters from you to T. E. Murley dated August 6, 1987 and August 27, 1987. The enclosed safety evaluation contains the results of the NRC staff's review which concludes that the proposed changes are acceptable.

If you have any questions regarding this evaluation please contact Byron Siegel the NRC staff's coordinator for the BWO programs at (301) 492-7764.

A handwritten signature in cursive script that reads "Byron Siegel".

Byron Siegel, Lead Project Manager  
for BWO Programs

Enclosure: As stated



ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REVIEW OF A PROPOSED REVISION TO THE B&W OWNER'S GROUP

INTEGRATED SURVEILLANCE PROGRAM

TAC NO.# 65927

MATERIALS ENGINEERING BRANCH

DIVISION OF ENGINEERING AND SYSTEMS TECHNOLOGY

Background

The Babcock & Wilcox (B&W) Owners Group proposed an integrated reactor vessel surveillance program for Oconee, Units 1, 2 and 3; Arkansas Nuclear One, Unit 1; Ranch Seco; Three Mile Island, Unit 1; Three Mile Island, Unit 2; Midland, Unit 1; Davis Besse, Unit 1; and Crystal River, Unit 3 plants. In this program, reactor vessel surveillance capsules from all the participating owners, except Consumers Power Co., were to be irradiated inside the reactor vessels at Davis Besse and Crystal River. The integrated surveillance program was documented in Report BAW-1543, Rev. 2, February 1984, "Integrated Reactor Vessel Material Surveillance Program." The staff's review of the integrated program is documented in a letter from C.O. Thomas to J. H. Taylor, dated March 15, 1985. The staff approved the integrated program for all participating plants, except Three Mile Island, Unit 2 and Midland, Unit 1.

The regulatory requirements for an integrated material surveillance program are documented in 10 CFR 50, Appendix H. This appendix indicates that the material surveillance program is required to monitor changes in the fracture toughness properties of ferritic reactor vessel beltline materials resulting from exposure of these materials to neutron irradiation and the thermal environment.

Discussion

In letters to T. E. Murley dated August 6, 1987 and August 27, 1987, B&W, acting for the owners group proposed changes to the owners group integrated reactor vessel surveillance program. The changes include a revised surveillance capsule insertion and withdrawal schedule and deletion of Capsule TMI-1A from the program.

The changes to the capsule withdrawal schedule were needed because of changes to the end-of-life calculated neutron exposures of the participating vessels and the calculated neutron exposures at the capsule holder positions. Changes in calculated neutron exposures result from plants using low leakage cores and more accurate neutron fluence determinations. Except for TMI-1, end of life neutron fluence values were previously reported in Report BAW-1895,

"Pressurized Thermal Shock Evaluation in Accordance with 10 CFR 50.61 for Babcock & Wilcox Owners Group Reactor Pressure Vessels." TMI-1 values were modified consistent with the results of Report BAW-1901, "Analysis of Capsule TMI-1C GPU Nuclear Three Mile Island Nuclear Station Unit 1," March 1986. The B&W method of calculating neutron fluence and owners group plants end of life neutron fluence values were reviewed by the staff in its evaluation of the PTS issue and owners group surveillance capsules.

The Owners Group proposes that Capsule TMI-1A be destructively examined to requalify the TMI-2 B&W Owners Group surveillance capsules. TMI-1A was one of six capsules removed from the TMI-2 reactor. Capsules TMI-1A and TMI-2 LG2 (both in the ZY holder tube location) represent the "worse case" capsules based on the condition of the temperature monitors obtained by radiography. These two capsules experienced a similar thermal environment, which appears to be hotter than the other holder tube locations. The TMI-1A capsule contains Charpy V notch and tensile specimen. Since the TMI-2 LG2 capsule contains Charpy V notch, tensile and compact fracture toughness specimens, the TMI-2 LG2 capsule will provide substantially more useful fracture toughness data than the TMI-1A capsule.

Capsule TMI-1A contains weld metal WF-25, which is one of the materials in the beltline region of TMI-1. In addition to capsules TMI-1C and TMI-1E, weld metal WF-25 is also contained in Owners Group Capsules CR3-LG1, TMI-2LG2 and TMI-2LG1. The Owners Group capsules also contain weld metal SA-1526, which was made with the same heat of filler wire used to fabricate WF 25 weldments. The filler wire contributes residual elements to the weldment. Staff studies indicate that the residual elements in the filler wire contribute to the neutron irradiation damage to the weldment. Since SA-1526 and WF-25 weldments were made with the same filler wire, the SA-1526 surveillance welds will provide data on the effect of neutron irradiation on WF-25 weld metal. Although the weld metal in TMI-1A will not be irradiated and tested, as planned, the owners group program contains other sources of weld metal, which can be used to replace the TMI-1A capsule weld metal.

### Conclusions

1. Since Owners Group capsules can provide more useful fracture toughness data than the TMI-1A capsule and the effect of neutron irradiation on TMI-1A weld metal can be evaluated from material in other surveillance capsules, the TMI-1A capsule may be used to requalify the TMI-2 Owners Group surveillance capsules.
2. The integrated reactor vessel materials surveillance program documented in Report BAW-1543A, Rev. 2 and revised in accordance with B&W letters dated August 6, 1987 and August 27, 1987 will be capable of monitoring the effect of neutron irradiation and the thermal environment on the fracture toughness of the ferritic reactor vessel beltline materials in the plants participating in the integrated material surveillance program.
3. Based on conclusions 1 and 2 above, the changes to the integrated surveillance program documented in B&W letters dated August 6, 1987 and August 27, 1987 are acceptable.

# Babcock & Wilcox

a McDermott company

Nuclear Power Division

October 20, 1987

3315 Old Forest Road  
P.O. Box 10935  
Lynchburg, VA 24506-0935  
(804) 385-2000

Mr. D. N. Miskiewicz  
Florida Power Corporation  
P.O. Box 14042  
St. Petersburg, FL 33733

**Subject:** Capsule Identification for Insertion in CR-3 During  
Cycle 6 Refueling Outage

**Reference:** BAW-1543, Rev. 02, "Integrated Reactor Vessel  
Material Surveillance Program (Addendum), dated  
July 1987.


Dear Mr. Miskiewicz:

As you know the capsule withdrawal schedule was changed this year, thus BAW-1543 was revised with the issuance of the Addendum, referenced above. The NRC approved this change in capsule insertion in their SER of Sept 21, 1987 with a change needed to requalify the capsules removed from the TMI-2 vessel, that being the deletion of TMI1-A from the schedule.

Thus, the capsules to be withdrawn and inserted during CR-3 cycle six outage are as per Table 2-1, page 2-2 of BAW-1543, Addendum 1, with the following exception. This removal of TMI1-A capsule from the schedule was included in the SER released by NRC. Capsule TMI1-A was opened to provide data to requalify the B&WOG research capsules for re-insertion. Thus a replacement capsule was needed to fill the remaining space in capsule holder YX TOP. Capsule TMI2-D was selected to be used as the filler or dummy capsule for insertion in YX TOP and is not considered to be a capsule needed for the Integrated Surveillance Program.

If there are questions please call me at 804-385-2208.

Very truly yours,



J. F. Walters  
Project Manager  
Owners Group Engineering Services

cc: Scott Stuart - CR Site  
R. J. Finnin - CR B&W Site

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## 1. INTRODUCTION

This addendum to BAW-1543, Rev. 2, provides a revised insertion and withdrawal schedule for surveillance capsules in the Crystal River-3 and Davis-Besse reactors. Extensive changes are made in the irradiation schedule starting with the next refueling outages:

- Crystal River-3, end-of-cycle 6, fall 1987
- Davis-Besse, end-of-cycle 5, spring 1988

The changes in schedule were required to provide for the following changes:

- Recalculation of neutron exposure of the vessels.
- Recalculation of neutron exposure of the capsules.

The end-of-life calculated neutron exposures of the participating vessels that are the bases for the schedule are shown in Table 1-1. The calculated neutron exposure of the capsule holder positions (beyond the current cycle) are shown in Table 1-2. Changes from the previously used values are due to more accurate determinations as a result of actual fluence determinations and a number of plants using low leakage fuel cycles. Except for TMI-1, these end-of-life fluence values are identical to that reported in BAW-1895, "Pressurized Thermal Shock Evaluations in Accordance with 10CFR50.61 for Babcock & Wilcox Owners Group Reactor Pressure Vessels." TMI-1 values were modified consistent with the results of BAW-1901, "Analysis of Capsule TMI1-C GPU Nuclear Three Mile Island Nuclear Station - Unit 1," March 1986.

The revised schedules are shown in section 2 of this report. These revised schedules will also be presented in BAW-1543, Rev. 3, which is currently in preparation.

Table 1-1. Reactor Vessel Neutron Exposure

<u>Nuclear Plant</u>	<u>Calculated Peak Inside Surface Fluence at End-of-Life (32 EFPY), n/cm<sup>2</sup></u>
Oconee-1	1.16E19
Oconee-2	1.20E19
TMI-1	0.80E19
Crystal River-3	0.96E19
ANO-1	1.10E19
Oconee-3	1.56E19
Rancho Seco	0.91E19
Davis-Besse	1.70E19

Table 1-2. RVSP Capsule Neutron Exposure

Fuel Cycle	Fluence, n/cm <sup>2</sup> /cycle			
	<u>Crystal River-3</u>		<u>Davis-Besse</u>	
	<u>High Flux (10.9<sup>0</sup>) Locations</u>	<u>Low Flux (26.9<sup>0</sup>) Locations</u>	<u>High Flux (10.9<sup>0</sup>) Locations</u>	<u>Low Flux (26.9<sup>0</sup>) Locations</u>
1A	1.74E18	1.13E18	3.19E18	2.08E18
1B	1.16E18	0.76E18	NA	NA
2	1.13E18	0.74E18	3.16E18	2.06E18
3	2.20E18	1.43E18	2.92E18	1.90E18
4	2.29E18	1.49E18	3.76E18	2.45E18
5	3.29E18	2.15E18	3.41E18	2.22E18
6 and beyond	2.22E18	1.45E18	3.27E18	2.13E18

## 2. INTEGRATED REACTOR VESSEL SURVEILLANCE PROGRAM

The revised insertion and withdrawal schedule for irradiation capsules in Crystal River-3 is presented in Table 2-1 and Figure 2-1. The revised insertion and withdrawal schedule for irradiation capsules in Davis-Besse is presented in Table 2-2 and Figure 2-2. A summary of the status of all irradiation capsules currently in the integrated reactor vessel surveillance program is presented in Table 2-3.

Table 2-1. Capsule Insertion and Withdrawal Schedule for  
Crystal River Unit 3

<u>Holder Tube</u>	<u>Location in Holder Tube</u>	<u>Remove</u>	<u>Insert</u>
<u>Installed at Initial Fuel Load</u>			
XW	Top		CR3-B (WC)
XW	Bottom		CR3-D (WC)
<u>End of First Fuel Cycle, First Part (1A)</u>			
WZ	Top		CR3-LG1 (WC)
WZ	Bottom		CR3-LG2 (WC)
ZY	Top		CR3-C (W)
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-B (WC)	CR3-E (W)
WX	Top		OC3-B (W)
WX	Bottom		CR3-F (WC)
<u>End of First Fuel Cycle, Second Part (1B)</u>			
No change.			
<u>End of Second Cycle</u>			
YZ	Top	OC2-A (W)	OC1-C (W)
WX	Top	OC3-B (W)	TM11-C (W)
<u>End of Third Cycle</u>			
No change.			
<u>End of Fourth Cycle</u>			
WZ	Top	CR3-LG1 (WC)	None
WZ	Bottom	CR3-LG2 (WC)	None
YZ	Bottom	OC1-A (W)	OC1-B
<u>End of Fifth Cycle</u>			
WZ	Top	None	OC2-B
WZ	Bottom	None	CR3-LG2 (WC)
ZY	Top	CR3-C (W)	OC3-F (W)
XW	Bottom	CR3-D (WC)	TM11-B
WX	Top	TM11-C (W)	OC3-C (W)
<u>End of Sixth Cycle</u>			
YZ	Top	OC1-C (W)	TM12-LG1 (WC)(b)
YZ	Bottom	OC1-B (a)	TM12-LG2 (WC)(b)
YX	Top	OC2-E (W)	TM11-A (W)(b)
WX	Bottom	CR3-F (WC)	TM11-F



Table 2-1. Capsule Insertion and Withdrawal Schedule for  
Crystal River Unit 3 (Cont'd)

<u>Holder Tube</u>	<u>Location in Holder Tube</u>	<u>Remove</u>	<u>Insert</u>
<u>End of Seventh Cycle</u>			
XW	Bottom	TMI1-B (a)	OC2-D
<u>End of Eighth Cycle</u>			
WZ	Top	OC2-B (a)	OC3-E (W)
ZY	Bottom	CR3-A (W) (a)	OC2-F
YX	Bottom	OC3-D (W)	OC1-D
<u>End of Ninth Cycle</u>			
WZ	Top	OC3-E (W)	None
WZ	Bottom	CR3-LG2 (WC)	None
YZ	Top	TMI2-LG1 (WC)(b)	TMI1-D
YX	Top	TMI1-A (W)(b)	OC3-E (W) from WZ top
WX	Top	OC3-C (W)(a)	TMI2-B (WC)(b)
<u>End of Tenth Cycle</u>			
No change.			
<u>End of Eleventh Cycle</u>			
XW	Top	CR3-E (W)	TMI2-B (WC)(b) from WX top
WX	Top	TMI2-B (WC)(a)(b)	None
WX	Bottom	TMI1-F (a)	None
<u>End of Twelfth Cycle</u>			
YZ	Top	TMI1-D	None
YZ	Bottom	TMI2-LG2 (WC)(b)	None
<u>End of Thirteenth Cycle</u>			
No change.			
<u>End of Fourteenth Cycle</u>			
YX	Bottom	OC1-D (a)	TMI1-D
XW	Top	TMI2-B (WC)(a)(b)	None
XW	Bottom	OC2-D (a)	None
<u>End of Fifteenth Cycle</u>			
No change.			

Table 2-1. Capsule Insertion and Withdrawal Schedule for  
Crystal River Unit 3 (Cont'd)

<u>Holder Tube</u>	<u>Location in Holder Tube</u>	<u>Remove</u>	<u>Insert</u>
<u>End of Sixteenth Cycle</u>			
ZY	Top	OC3-F (W)(a)	None
ZY	Bottom	OC2-F (a)	None
YX	Top	OC3-E (W)(a)	None
YX	Bottom	TMI1-D (a)	None

**LEGEND**

- (a) Capsule may not be tested upon removal.
- (b) Requalified from TMI-2 irradiation.
- (W) Capsule contains weld metal specimens.
- (WC) Capsule contains weld metal compact fracture toughness specimens.

Table 2-2. Capsule Insertion and Withdrawal Schedule for Davis-Besse

<u>Holder Tube</u>	<u>Location in Holder Tube</u>	<u>Remove</u>	<u>Insert</u>
<u>Installed at Initial Fuel Load</u>			
WZ	Top		AN1-B
WZ	Bottom		RS1-B (WC)
ZY	Top		TE1-B (WC)
ZY	Bottom		TE1-F (WC)
YZ	Top		AN1-A (W)
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)
<u>End of First Cycle</u>			
WZ	Top	AN1-B	DB1-LG1 (WC)
WZ	Bottom	RS1-B (WC)	RS1-E (W)
ZY	Bottom	TE1-F (WC)	DB1-LG2 (WC)
<u>End of Second Cycle</u>			
YX	Top	RS1-D (WC)	RS1-A (W)
<u>End of Third Cycle</u>			
ZY	Top	TE1-B (WC)	TE1-E (W)
YZ	Top	AN1-A (W)	AN1-D
<u>End of Fourth Cycle</u>			
YX	Top	RS1-A (W)(a)	AN1-F
WZ	Top	DB1-LG1 (WC)	RS1-F from WX bottom
WX	Top	TE1-A (W)	None
WX	Bottom	RS1-F to WZ top	None
<u>End of Fifth Cycle</u>			
WZ	Top	RS1-F (WC)	None
WZ	Bottom	RS1-E (W)(a)	None
YZ	Top	AN1-D	None
YZ	Bottom	AN1-C (W)	None
XW	Bottom	RS1-C (W)(a)	AN1-D from YZ top
<u>End of Sixth Cycle</u>			
No change.			
<u>End of Seventh Cycle</u>			
No change.			

Table 2-2. Capsule Insertion and Withdrawal Schedule  
for Davis-Besse (Cont'd)

<u>Holder Tube</u>	<u>Location in Holder Tube</u>	<u>Remove</u>	<u>Insert</u>
<u>End of Eighth Cycle</u>			
ZY	Bottom	DB1-LG2 (WC)	AN1-D from XW bottom
YX	Top	AN1-F (a)	None
YX	Bottom	TE1-C (W)(a)	None
XW	Top	TE1-D (WC)	None
XW	Bottom	AN1-D	None
<u>End of Ninth Cycle</u>			
No change.			
<u>End of Tenth Cycle</u>			
No change.			
<u>End of Eleventh Cycle</u>			
ZY	Top	TE1-E (W)(a)	None
ZY	Bottom	AN1-D (a)	None

LEGEND

- (a) Capsule may not be tested upon removal.
- (W) Capsule contains weld metal specimens.
- (WC) Capsule contains weld metal compact fracture toughness specimens.

Table 2-3. Summary Status of Surveillance Capsules

<u>Capsule ID</u>	<u>Weld Metal/ Compacts</u>	<u>Current Location</u>	<u>Desired</u>	<u>Expected/ Received</u>	<u>Time of Removal</u>	<u>Comments</u>
OCI-F	No/No	Tested	---	5.7E17	---	Reported in BAW-1421, Rev. 1
OCI-E	Yes/No	Tested	---	1.5E18	---	Reported in BAW-1436
OCI-B	No/No	CR3-YZ	4.4E18	7.0E18	CR3-cycle 6	---
OCI-A	Yes/No	Tested	---	9.0E18	---	Reported in BAW-1837
OCI-C	Yes/No	CR3-YZ	1.2E19	1.2E19	CR3-cycle 6	---
OCI-D	No/No	Holding	1.2-2.3E19	1.5E19	CR3-cycle 14	---
OC2-C	Yes/No	Tested	---	9.4E17	---	Reported in BAW-1437
OC2-A	Yes/No	Tested	---	3.4E18	---	Reported in BAW-1699
OC2-B	No/No	CR3-WZ	6.7E18	7.6E18	CR-3 cycle 8	---
OC2-E	Yes/No	CR3-YX	1.2E19	1.3E19	CR-3 cycle 6	---
OC2-D	No/No	Holding	1.2-2.4E19	1.1E19	CR3-cycle 14	---
OC2-F	No/No	Holding	1.2-2.4E19	1.2E19	CR3-cycle 16	---
OC3-A	Yes/No	Tested	---	7.4E17	---	Reported in BAW-1438
OC3-B	Yes/No	Tested	---	3.1E18	---	Reported in BAW-1697
OC3-C	Yes/No	CR3-WX	8.7E18	9.6E18	CR3-cycle 9	---
OC3-D	Yes/No	CR3-YX	1.6E19	1.8E19	CR3-cycle 8	---
OC3-E	Yes/No	Holding	1.6-3.1E19	1.8E19	CR3-cycle 16	---
OC3-F	Yes/No	CR3-ZY	1.6-3.1E19	1.7E19	CR3-cycle 16	---
TMI1-E	Yes/No	Tested	---	1.1E18	---	Reported in BAW-1439
TMI1-B	No/No	CR3-XW	4.9E18	4.0E18	CR3-cycle 7	---
TMI1-C	Yes/No	Tested	---	8.7E18	---	Reported in BAW-1901
TMI1-A	Yes/No	Holding	0.8E19	0.8E19	CR3-cycle 9	Retrieved from TMI-2
TMI1-D	No/No	Holding	0.8-1.6E19	1.2E19	CR3-cycle 16	---
TMI1-F	No/No	Holding	0.8-1.6E19	1.2E19	CR3-cycle 11	---
CR3-B	Yes/Yes	Tested	---	1.1E18	---	Reported in BAW-1679 and BAW-1718
CR3-C	Yes/No	Tested	---	6.6E18	---	Reported in BAW-1898
CR3-D	Yes/Yes	Tested	---	7.5E18	---	Reported in BAW-1899 and BAW-1914
CR3-F	Yes/Yes	CR3-WX	1.0E19	1.2E19	CR3-cycle 6	---

2-7

Table 2-3. Summary Status of Surveillance Capsules (Cont'd)

Capsule ID	Weld Metal/ Compacts	Current Location	Desired	Expected/ Received	Time of Removal	Comments
CR3-A	Yes/No	CR3-ZY	1.0-1.9E19	1.1E19	CR3-cycle 8	---
CR3-E	Yes/No	CR3-XW	1.0-1.9E19	1.5E19	CR3-cycle 11	---
AN1-E	Yes/No	Tested	---	7.3E17	---	Reported in BAW-1440
AN1-B	No/No	Tested	---	4.3E18	---	Reported in BAW-1698
AN1-A	Yes/No	Tested	7.2E18	1.0E19	---	Reported in BAW-1836
AN1-C	Yes/No	DB-YZ	1.1E19	1.7E19	DB-cycle 5	---
AN1-D	No/No	DB-YZ	1.1-2.2E19	2.1E19	DB-cycle 11	---
AN1-F	No/No	DB-YX	1.1-2.2E19	1.4E19	DB-cycle 8	---
RS1-B	Yes/Yes	Tested	---	4.0E18	---	Reported in BAW-1702 and BAW-1720
RS1-A	Yes/No	Holding	---	7.2E18	---	Irradiation complete
RS1-D	Yes/Yes	Tested	---	6.6E18	---	Reported in BAW-1792 and BAW-1793P
RS1-F	Yes/Yes	DB-WZ	0.9E19	1.7E19	DB-cycle 5	---
RS1-C	Yes/No	DB-XW	0.9-1.8E19	1.1E19	DB-cycle 5	---
RS1-E	Yes/No	DB-WZ	0.9-1.8E19	1.4E19	DB-cycle 5	---
TE1-F	Yes/Yes	Tested	---	2.0E18	---	Reported in BAW-1701 and BAW-1719
TE1-B	Yes/Yes	Tested	---	5.9E18	---	Reported in BAW-1834 and BAW-1867
TE1-A	Yes/No	Tested	---	1.3E19	---	Reported in BAW-1882
TE1-D	Yes/Yes	DB-XW	1.7E19	1.7E19	DB-cycle 8	---
TE1-C	Yes/No	DB-YX	1.7-3.4E19	2.6E19	DB-cycle 8	---
TE1-E	Yes/No	DB-ZY	1.7-3.4E19	1.7E19	DB-cycle 11	---
CR3-LG1	---	Tested	---	6.1E18	---	Reported in BAW-1910P
CR3-LG2	---	CR3-WZ	1.4E19	1.6E19	CR3-cycle 9	---
DB1-LG1	---	Tested	---	8.3E18	---	Reported in BAW-1920P
DB1-LG2	---	DB-ZY	1.4E19	1.5E19	DB-cycle 8	---
TMI2-LG1	---	Holding	7.8E18	7.4E18	CR3-cycle 9	Retrieved from TMI-2
TMI2-LG2	---	Holding	1.4E19	1.4E19	CR3-cycle 12	Retrieved from TMI-2

Figure 2-1. Crystal River-3 IRVSP Schedule

Time  
9/87 4/89 11/90 6/92 1/94 8/95 3/97 10/98 5/00 12/01 7/03

Cycle 7 8 9 10 11 12 13 14 15 16

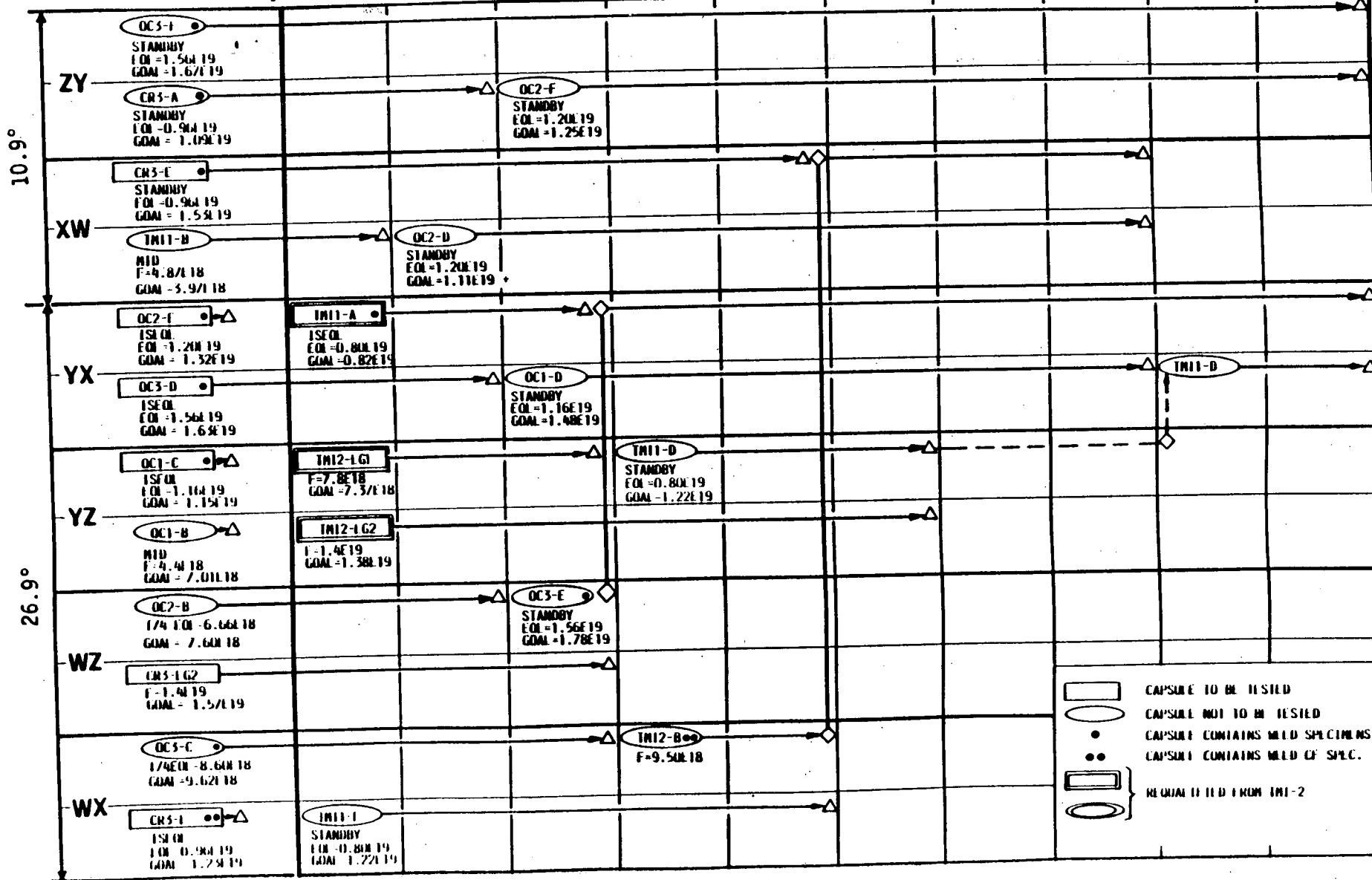
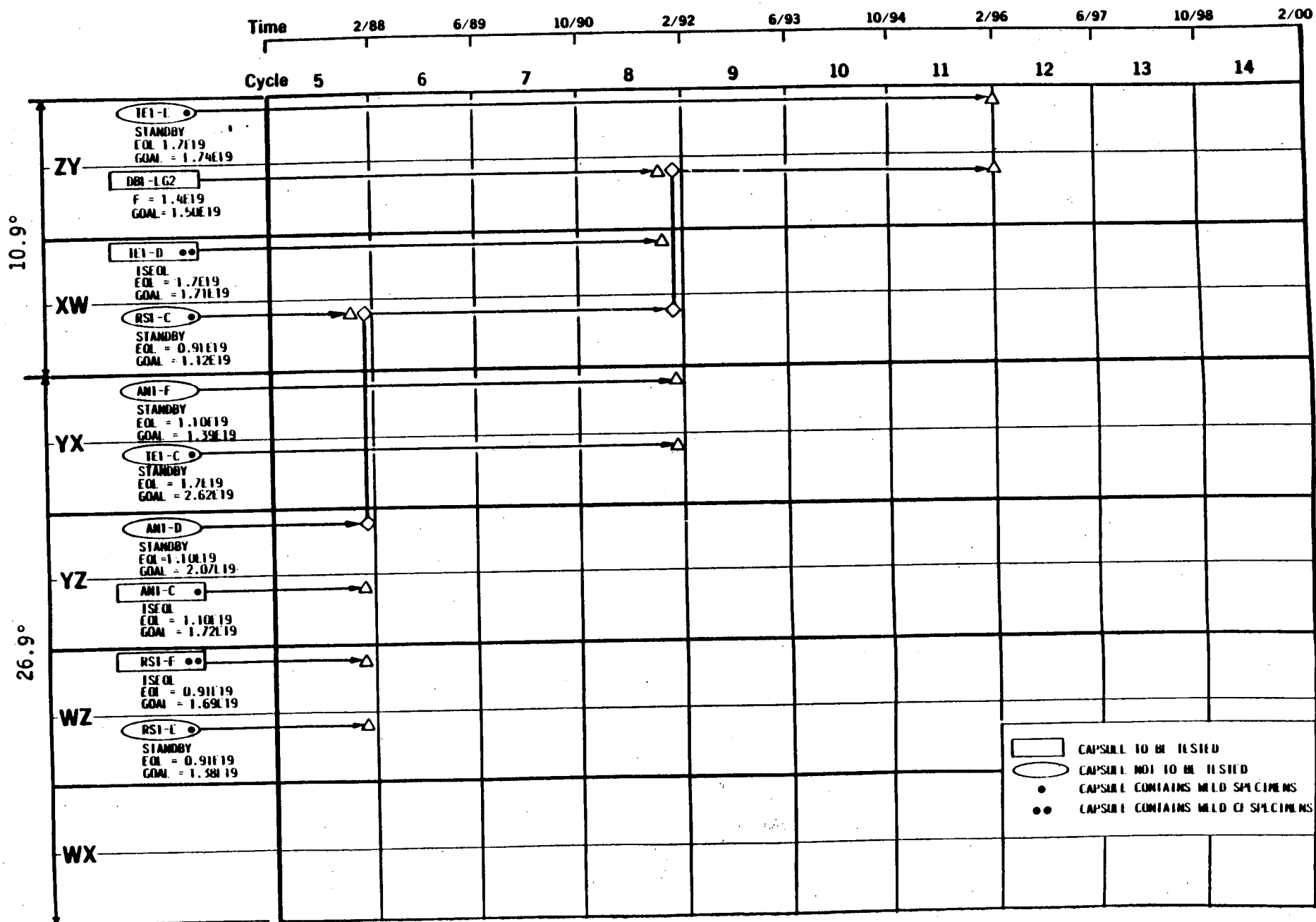


Figure 2-2. Davis-Besse IRVSP Schedule



10.9°

26.9°

2-10

- CAPSULE TO BE TESTED
- CAPSULE NOT TO BE TESTED
- CAPSULE CONTAINS MILD SPECIMENS
- CAPSULE CONTAINS MILD SPECIMENS



### 3. CERTIFICATION

This report is an accurate description of the revised irradiation schedules for the integrated reactor vessel materials surveillance program designed in accordance with the requirements of 10 CFR 50, Appendixes G and H.

L. B. Gross, P.E. 8/3/87  
L. B. Gross, Principal Engineer Date  
Materials and Structural Analysis Unit

This report has been reviewed and is an accurate description of the revised irradiation schedules for the integrated reactor vessel materials surveillance program.

A. L. Lowe, Jr., P.E. 8/3/87  
A. L. Lowe, Jr., Advisory Engineer Date  
Materials and Structural Analysis Unit

Verification of independent review.

A. D. McKim 8/3/87  
A. D. McKim, Manager Date  
Materials and Structural Analysis Unit

This report has been approved for release.

C. J. Hudson 8/3/87  
C. J. Hudson Date  
Program Manager

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January 14, 1988

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
IST Program Revision No. 14

Check # 18332821  
was sent with  
Original Letter!

Gentlemen:

Please find attached for your information the Oconee Inservice Testing (IST) Program Revision 14 dated December 14, 1987. By letter dated November 6, 1987 Duke provided a copy of Revision 13 to the Oconee IST Program dated April 6, 1987.

Within Revision 14, the following additional requests for relief are included from the requirements of paragraph IWV of the 1980 Edition of the ASME Boiler and Pressure Vessel Code Section XI with Addenda through Winter 1980:

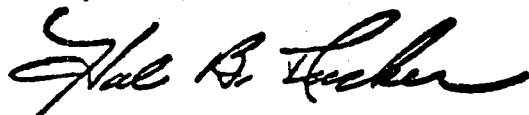
- o Relief request bases numbers 79 through 91.

Within Revision 14, editorial changes were made to the request for relief numbers 39, 43, 44, 53, 65, 66, 67, 71, 74, 75, 76, 77, and 78. In addition editorial changes were made to TABLE IV (relief requests previously approved by Amendment Nos. 109/109/106). Specifically:

- o 3BS-4 was changed to 3BS-6
- o 3CF-9 was changed to 3CF-7
- o 3FW-59 was changed to 3DW-59
- o 3FW-60 was changed to 3DW-60

These requests for relief require payment of a fee for approval per 10CFR 70, Part 170.12. Accordingly, please find attached a check in the amount of \$150.00 as set forth in Part 170.21.

Very truly yours,



Hal B. Tucker

PJN/267/jgc

Attachment

~~8801210090 2pp.~~

Document Control Desk  
January 14, 1988  
Page 2

xc: w/attachment

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U.S. Nuclear Regulatory  
Commission - Region II  
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Ms. Helen Pastis  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

w/o attachment

Mr. P.H. Skinner  
NRC Resident Inspector  
Oconee Nuclear Station