

Part 171 Generic Costs

NRR

AEOD

RESEARCH

Reactors By Type

Determination of Annual Fee

Annual Fee

Estimated Collections

Budget By Major Category
&
Hourly & Annual Rate

FTE's By Office

9003010239 900228
PDR PR
171 MISC PDC

Compiled By:
Douglas Weiss, LFDCB

NRC Form B-C
(6-79)
NRCM 0240

COVER SHEET FOR CORRESPONDENCE

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Generic Costs

PART 171 ANNUAL FEES

FY 1990

\$438,770,000	President's Budget
x45%	Recovery Rate
<hr/>	
\$197,000,000	Maximum Amount Recoverable
-57,000,000	Part 170 Estimated Collection
-4,900,000	DOE Waste Fund Collection FY 88
-18,500,000	Estimated DOE Waste Fund Collection FY 89
<hr/>	
\$116,600,000	To Be Recovered through Part 171 Annual Fees
or	
\$115,000,000	(Rounded Down)

Costs to be Recovered \$115 million = .80 of the budget base
Total Part 171 Generic \$143 million equals "M" factor
Costs

SUMMARY
PART 171 GENERIC COSTS
FY 1990
(\$000's)

Costs-All Plants	\$129,377
PWR Costs (NSSS)	5,783
PWR Large Dry Containment	148
Westinghouse Large Dry Containment	164
Westinghouse Ice Condensers	342
B&W Large Dry Containment	704
CE Large Dry Containment	228
BWR only	3,204
GE Mark I	748
GE Mark II	155
GE Mark II & III	408
GE Mark III	164
Seismic - East of Rockies	<u>1,151</u>
TOTAL COSTS	\$142,576

GENERIC COST
DETAILED FEE BASIS FOR ALL REACTORS
 (000's)

<u>PROGRAM OFFICE</u>	<u>PTS</u>	<u>FTE</u>	<u>TOTAL</u>	<u>REACTORS</u>	<u>COST PER REACTOR</u>
NRR	\$ 5,153	\$17,408	\$ 22,561	110	\$ 205.1
AEOD	9,670	15,040	24,710	110	224.6
RESEARCH (All Reactors)	28,224	10,000	38,224	110	347.4
RESEARCH (PWR's & BWR's)	34,863	5,600	40,463	109	371.2
RESEARCH (Seismic All Plants)	2,875	644	3,419	110	31.0
TOTALS	\$80,785	\$48,592	\$129,377		\$1,179.3

SUMMARY
 FEE BASIS FOR ADDITIONAL
 CHARGES BY NUCLEAR STEAM SUPPLY SYSTEM (NSSS)
VENDOR AND CONTAINMENT TYPE - DETAIL

<u>PRESSURIZED WATER REACTORS</u>	<u>PT\$\$</u> (<u>\$000</u>)	<u>FTE\$</u> (<u>\$000</u>)	<u>TOTAL</u>	<u>NO. OF</u> <u>REACTORS</u>	<u>COST PER</u> <u>REACTOR</u>
<u>NSSS ALL PWRs only</u>	\$4,247	\$1,536	\$5,783	73	\$79.2
<u>NSSS ALL PWR's Dry Containment</u>	\$100	\$48	\$148	65	\$ 2.3
<u>NSSS WESTINGHOUSE PWR LDC</u>	\$100	\$64	\$164	42	\$ 3.9
<u>NSSS WESTINGHOUSE ICE CONDENSER</u>	\$150	\$192	\$342	8	\$42.7
<u>NSSS B&W Large Dry Containment</u>	\$400	\$304	\$704	8	\$88.0
<u>NSSS CE PWR Large Dry Containment</u>	\$100	\$128	\$228	15	\$15.2
<u>BOILING WATER REACTORS</u>					
<u>NSSS ALL BWR's</u>	\$2,788	\$416	\$3,204	37	\$86.6
<u>NSSS BWR GE MARK I</u>	\$700	\$48	\$748	24	\$31.2
<u>NSSS SWR GE MARK II</u>	\$123	\$32	\$155	9	\$17.2
<u>NSSS BWR MARK II & III</u>	\$200	\$208	\$408	13	\$31.3
<u>NSSS BWR GE MARK III</u>	\$100	\$64	\$164	4	\$41.0
<u>SEISMIC WORK</u>					
<u>SEISMIC - ALL REACTORS</u>	\$2,875	\$544	\$3,419	110	\$31.0
<u>SEISMIC-EAST OF ROCKIES</u>	\$991	\$160	\$1,151	99	\$11.6

COVER SHEET FOR CORRESPONDENCE

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FEE BASE FOR
CHARGES BY VENDOR/CONTAINEMNT TYPE
(in \$000)

FY 1990

Program Support \$ FTE

Part 171 Work by NRR

Generic Effort - All Plants

1. Reactor Performance Evaluation		
a. Generic Communications	\$ 516	10.2
b. Engineering/Safety Assessments	362	6.7
2. Reactor Maintenance and Surveillance	-0-	2.2
3. Licensee Performance Evaluation		
a. Quality Assurance Program	-0-	4.5
4. License and Examine Reactor Operators		
a. Program Development and Assessment/ Regional Oversight	50	5.0
5. Region-Based Inspections		
a. Lab and Technical Support	910	11.6
6. Specialized Inspections		
a. Vendor Inspections	815	15.1
b. Regional Assessment	595	19.2
7. Regulatory Improvements		
a. Technical Specifications	135	8.1
b. Safety Goal Implementation	-0-	1.0
c. Generic Issues/Rules/Reg. Guides/Policy	135	11.5
8. Licensee Reactor Accident Management Evaluation		
a. Emergency Procedures	1,200	5.3
b. Regional Assistance Committees	-0-	2.0
9. Safeguards Licensing and Inspection		
a. Regulatory Effectiveness Reviews	435	6.4
	\$5,153	108.8
Total NRR Part 171		

FTE = 108.8 x \$160.0 = \$17,408
PTS 5,153

Total NRR - (All Plants) = \$22,561 = \$205.1 per plant
110 Plants

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REACTOR SAFETY AND SAFEGUARDS REGULATION
 FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

OFFICE OF
 NRR

	FY 1989	FY 1990
\$		
FTE		

IRAM ELEMENT: Reactor Operations Reviews

IRAM ELEMENT: Reactor Performance Evaluation

ACTIVITIES:

Events Analysis (NRR)	80	12.0	100	13.4
Generic Communications (NRR)	0	72.7	516	10.2
Engineering/Safety Assessments	252	5.1	362	6.7
Section Supervision (NRR)	0	3.0	0	3.6
Overhead (NRR)	0	15.4	0	14.1
IRAM ELEMENT TOTAL:	332	49.0	978	48.0

ITEM 1A
 ITEM 16

IRAM ELEMENT: Reactor Maintenance and Surveillance

ACTIVITIES:

Maintenance and Surveillance (NRR)	164	1.2	0	2.2
Section Supervision (NRR)	0	0.2	0	0.3
Overhead (NRR)	0	1.6	0	1.5
IRAM ELEMENT TOTAL:	164	3.0	50	4.0

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DETAILED RESOURCE REPORT
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FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM ELEMENT: Licensee Performance Evaluation

ACTIVITIES:

1. Systematic Assessment of Licensee Performance

NRR	0	6.5	0	0.8
Regions	0	18.5	0	16.5
ACTIVITY TOTAL:	90	25.0	90	17.3

2. Quality Assurance

NRR	90	2.5	0	3.0
Regions	0	0.4	0	1.5
ACTIVITY TOTAL:	90	2.9	90	4.5

✓ ITEM 3a

3. Performance Evaluation

NRR	134	3.0	200	5.2
Regions	0	0.0	0	0.0
ACTIVITY TOTAL:	9134	3.0	9200	5.2

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FY 1989 FY 1990

\$ FTE \$ FTE

4. Section Supervision

MIR	0	1.1	0	1.1
Regions	0	2.6	0	2.2
ACTIVITY TOTAL:	\$0	3.7	\$0	3.3

5. Overhead

MIR	0	4.9	0	3.9
Regions	0	11.5	0	10.8
ACTIVITY TOTAL:	\$0	16.4	\$0	14.7

PROGRAM ELEMENT TOTAL:

MIR	224	18.0	200	14.0
Regions	0	33.0	0	31.0
TOTAL:	\$224	51.0	\$200	45.0

PROGRAM TOTAL: Reactor Operations Reviews

MIR	720	70.0	1,178	64.0
Regions	0	33.0	0	31.0
PROGRAM TOTAL:	\$720	103.0	\$1,178	97.0

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DETAILED RESOURCE REPORT

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	FY 1989	FY 1990		
\$	FTE	\$	FTE	
PROGRAM: Human Performance in Reactor Safety				
PROGRAM ELEMENT: Human Performance Evaluation				
ACTIVITIES:				
1. Plant Personnel Training (MRR)	129	1.4	0	1.1
2. Man/Machine Interface (MRR)	102	0.0	359	0.0
3. Section Supervision (MRR)	0	0.3	0	0.2
4. Overhead (MRR)	0	1.3	0	0.9
PROGRAM ELEMENT TOTAL:	\$311	3.0	\$350	3.0

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(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM ELEMENT: License and Examine Reactor Operators

ACTIVITIES:

1. Reactor Operator Examinations

NRR	0	4.1	3,310	5.0
Regions	0	0.5	0	18.2

ACTIVITY TOTAL:	80	4.6	83,310	23.2

2. Reactor Operator Requalification Examinations

NRR	4,709	3.7	2,640	3.9
Regions	0	39.1	0	21.7

ACTIVITY TOTAL:	84,709	42.8	82,640	25.6

3. Program Development and Regional Oversight

NRR	0	4.8	50 ✓	5.0 ✓
Regions	0	0.0	0	0.0

ACTIVITY TOTAL:	80	4.8	850 ✓	5.0 ✓

850 ✓ 5.0 ✓
ITEM 4a.

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
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	FY 1989		FY 1990	
	\$	FTE	\$	FTE
4. Generic Activities				
NRR	0	1.4	0	0.0
Regions	0	4.5	0	3.0
	-----	-----	-----	-----
	90	5.9	90	3.0
5. Section Supervision				
NRR	0	1.7	0	1.6
Regions	0	6.8	0	5.2
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ACTIVITY TOTAL:	90	8.5	90	6.8
6. Overhead				
NRR	0	7.3	0	6.5
Regions	0	32.1	0	26.9
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ACTIVITY TOTAL:	90	39.4	90	33.4
PROGRAM ELEMENT TOTAL:				
NRR	4,709	23.0	6,000	22.0
Regions	0	83.0	0	75.0
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TOTAL:	94,709	106.0	96,000	97.0

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

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FY 1989 FY 1990

B FTE B FTE

GRAM TOTAL: Human Performance in Reactor Safety

NR	5,020	26.0	6,350	25.0
Regions	0	83.0	0	75.0
TOTAL:	95,020	109.0	96,350	100.0

GRAM: Reactor Operations Inspections

PROGRAM ELEMENT: Resident Inspections

ACTIVITIES:

1. Resident Inspectors (Regions)	0	148.4	0	160.0
2. Section Supervisor (Regions)	0	20.8	0	22.2
3. Overhead (Regions)	0	93.8	0	100.8
PROGRAM ELEMENT TOTAL:	\$0	263.0	\$0	283.0

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FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM ELEMENT: Region-Based Inspections

ACTIVITIES:

1. Power Reactor Inspections

NRR	3,387	7.6	3,470	7.2
Regions	0	186.1	0	168.0
ACTIVITY TOTAL:	83,387	193.7	83,470	175.2

2. Nonpower Reactors

Inspections (Regions)	0	2.2	0	4.6
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3. Lab and Technical Support

NRR	1,686	4.0	910	1.1
Regions	0	7.9	0	10.5
ACTIVITY TOTAL:	81,686	11.9	910	11.6

910 ✓ 11.6 ✓ ITEM 5a

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

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(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990	
	\$	FTE	\$	FTE
4. Allegation Followup (Regions)	0	9.3	0	13.8
5. Section Supervision				
MRR	0	2.4	0	0.9
Regions	0	27.3	0	25.3
ACTIVITY TOTAL:	80	29.7	80	26.2
6. Overhead				
MRR	0	4.0	0	3.8
Regions	0	123.2	0	124.8
ACTIVITY TOTAL:	80	127.2	80	128.6
PROGRAM ELEMENT TOTAL:				
MRR	5,073	18.0	4,380	13.0
Regions	0	356.0	0	347.0
TOTAL:	55,073	374.0	84,380	360.0

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

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	FY 1989		FY 1990		
	\$	FTE	\$	FTE	\$

PROGRAM ELEMENT: Specialized Inspections

ACTIVITIES:

1. Functional Inspections - SSFI/SSONI

NRR	1,500	9.5	1,472	6.0
Regions	0	7.1	0	6.0
ACTIVITY TOTAL:	\$1,500	16.6	\$1,472	12.0

2. Specialized Facility Inspections (NRR)

	1,767	16.3	1,500	29.3
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3. Vendor Inspections

NRR	445	10.2	815	15.1
Regions	0	0.0	0	0.0
ACTIVITY TOTAL:	\$445	10.2	\$815	15.1

ITEM 6a

4. Deferred Plant Inspections (Regions)

	0	0.5	0	0.0
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5. Inspection Program Development/ Regional Assessment (NRR)

	335	12.0	595	19.2
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ITEM 6b

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990	
	\$	FTE	\$	FTE

6. Section Supervision

MRR	0	7.7	0	9.4
Regions	0	1.2	0	0.7
ACTIVITY TOTAL:	0	8.9	0	10.1

7. Overhead

MRR	0	32.3	0	25.0
Regions	0	4.2	0	3.3
ACTIVITY TOTAL:	0	36.5	0	28.3

PROGRAM ELEMENT TOTAL: Specialized Inspections

MRR	4,047	88.0	4,382	104.0
REGIONS	0	13.0	0	10.0
TOTAL:	4,047	101.0	4,382	114.0

PROGRAM TOTAL: Reactor Operations Inspections

MRR	9,120	106.0	8,762	117.0
REGIONS	0	632.9	0	640.0
TOTAL:	9,120	738.0	8,762	757.0

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989	FY 1990	
\$	FTE	\$	FTE

PROGRAM ELEMENT: Operating Reactor Licence Maintenance and Regulatory Improvement

ACTIVITIES:

1. Project Management (MRR)	0	167.7	0	117.5
2. Section Supervision (MRR)	0	9.3	0	13.7
3. Overhead (MRR)	0	58.0	0	53.6
PROGRAM ELEMENT TOTAL:	0	175.0	0	185.0

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support dollars in Thousands, Staff Years in full-Time Equivalents)

FY 1989		FY 1990		
\$	FTE	\$	FTE	\$

PROGRAM ELEMENT: Safety Evaluation of Licensing Actions

ACTIVITIES:

1. Plant-Specific Actions (NRR)	1,253	76.0	4,667	54.9
2. Multi-Plant Actions (NRR)	1,828	10.1	3,884	23.5
3. Topical Report Reviews (NRR)	2,178	2.6	0	1.8
4. Section Supervision (NRR)	0	9.7	0	9.2
5. Overhead (NRR)	0	32.6	0	36.6

PROGRAM ELEMENT TOTAL:

85,259	131.0	88,551	126.0
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REACTOR SAFETY AND SAFEGUARDS DECLARATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989 FY 1990

0 FTE 0 FTE

PROGRAM ELEMENT: Regulatory Improvements

ACTIVITIES:

1. Technical Specifications (RR)	612	11.6	135 ✓	0.1 ✓	ITEM 7a
2. Severe Accident Policy Implementation (RR)	50	0.9	565	3.5	
3. Safety Goal Implementation (RR)	376	3.2	0 ✓	1.0 ✓	ITEM 7b
4. Generic Issues/Rules/Reg. Guidelines/Policy (RR)	575	12.7	135 ✓	11.5 ✓	ITEM 7c
5. Individual Plant Examination (IPE) (RR)	0	0.0	0	4.0	
6. International Activities (RR)	0	0.0	0	0.0	
7. Section Supervision (RR)	0	2.1	0	3.3	
8. Overhead (RR)	0	16.7	0	13.6	

PROGRAM ELEMENT TOTAL:

61,621 48.0 6835 45.0

DEGRADATION TOTAL: Operating Reactor License Maintenance and Regulatory Improvement

66,000 356.0 69,306 356.0

TOTAL (RR)

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REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM: Reactor Accident Management

PROGRAM ELEMENT: Emergency Preparedness Licensing and Assessment

ACTIVITIES

1. License Review and Amendments

NRR	137	1.0	60	2.5
Regions	0	7.8	0	2.0
ACTIVITY TOTAL:	\$137	8.8	\$60	4.5

2. Annual Assessments

NRR	365	1.9	450	1.3
Regions	0	2.8	0	12.0
ACTIVITY TOTAL:	\$365	4.7	\$450	13.3

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 DETAILED RESOURCE REPORT
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	FY 1989		FY 1990	
	\$	FTE	\$	FTE
3. Section Supervision				
MR	0	0.3	0	0.6
Regions	0	1.6	0	1.7
ACTIVITY TOTAL:	0	1.9	0	2.1
4. Overhead				
MR	0	2.8	0	1.8
Regions	0	8.3	0	8.3
ACTIVITY TOTAL:	0	11.6	0	10.1
PROGRAM ELEMENT TOTAL:				
MR	502	6.0	510	6.0
Regions	0	21.0	0	26.0
TOTAL:	502	27.0	510	30.0

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REACTOR SAFETY AND SAFEGUARDS REGULATION
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FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM ELEMENT: Licensee Reactor Accident Management Evaluation

ACTIVITIES:

1. Role/Adequacy of Emergency Response Facilities (NRR) 0 0.1 0 0.0

2. Emergency Procedures (NRR) 1,103 3.8 1,200 5.3

ITEM 8/20/89

3. Regional Assistance Committees (Regions) 0 1.2 0 2.0

ITEM 8/20/89

4. Section Supervision

NRR 0 0.5 0 0.7

Regions 0 0.1 0 0.2

ACTIVITY TOTAL: 80 0.6 80 0.9

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	FY 1989		FY 1990	
	\$	FTE	\$	FTE

5. Overhead

NRR	0	2.6	0	2.0
Regions	0	1.7	0	0.8
ACTIVITY TOTAL:	\$0	4.3	\$0	2.8

PROGRAM ELEMENT TOTAL:

NRR	1,103	7.0	1,200	6.0
Regions	0	3.0	0	3.0
TOTAL:	\$1,103	10.0	\$1,200	11.0

PROGRAM TOTAL: Reactor Accident Management

NRR	1,605	13.0	1,710	14.0
Regions	0	24.0	0	27.0
TOTAL	\$1,605	37.0	\$1,710	41.0

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FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM: Reactor Safeguards

PROGRAM ELEMENT: Safeguards Licensing and Inspection

ACTIVITIES:

1. Plant-Specific Safeguards Licensing Actions

NRR	0	4.4	0	1.9
Regions	0	2.8	0	2.3
ACTIVITY TOTAL:	90	7.2	90	4.2

2. Multi-Plant Safeguards
Licensing Actions (NRR)

102	0.1	200	2.0
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3. Region-Based Inspections
(Regions)

0	15.5	0	19.2
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4. Regulatory Effectiveness Reviews

NRR	1,001	4.3	435	5.9
Regions	0	0.4	0	0.5
ACTIVITY TOTAL:	\$1,001	4.7	\$435	6.4

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	\$	FTE	\$	FTE
5. Section Supervision				
NRR	0	2.1	0	1.1
Regions	0	2.6	0	2.6
	-----		-----	
ACTIVITY TOTAL:	80	4.7	80	3.7
6. Overhead				
NRR	0	5.1	0	5.1
Regions	0	14.7	0	14.4
	-----		-----	
ACTIVITY TOTAL:	80	19.8	80	19.5
PROGRAM ELEMENT TOTAL: Safeguards Licensing and Inspection				
NRR	1,103	16.0	635	16.0
Regions	0	36.0	0	39.0
	-----		-----	
TOTAL:	81,103	52.0	8635	55.0
PROGRAM TOTAL: Reactor Safeguards				
NRR	1,103	16.0	635	16.0
Regions	0	36.0	0	39.0
	-----		-----	
TOTAL:	81,103	52.0	8635	55.0

Date as of:
01/10/90/15:35

Date Printed
01/10/90

REACTOR SAFETY AND SAFEGUARDS REGULATION
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990	
	\$	FTE	\$	FTE
MISSION AREA SUBTOTALS				
Direct Resources				
NRR	27,201	451.0	29,952	484.5
Regions	0	530.0	0	523.0
Total Direct Resources:	27,201	981.0	29,952	1,007.5
Overhead				
NRR	0	210.0	0	186.5
Regions	0	292.0	0	291.0
Total Overhead:	0	502.0	0	477.5
Indirect Resources				
NRR	27,201	661.0	29,952	671.0
Regions	0	822.0	0	814.0
MISSION AREA TOTAL:	27,201	1,483.0	29,952	1,485.0

NRC Form 8-C

(4-79)
NRCM 0240

COVER SHEET FOR CORRESPONDENCE

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FY 1990

Part 171 Work by AEOD

Program Support \$ FTE

Generic Effort - All Plants

1. Diagnostic Evaluations	\$ 350	7.0
2. Incident Investigation	50	3.0
3. NRC Incident Response	1,645	27.0
4. Technical Training Center	2,650	22.0
5. Operational Data Analysis	1,975	25.0
6. Performances Indicators	980	4.0
7. Operational Data Collection and Dissemination	<u>2,020</u>	<u>6.0</u>
Total AEOD Part 171	\$9,670	94.0

FTE = 94 x \$160.0 =
PTS

\$15,040
9,670

Total AEOD = (All Plants) = \$24,710 = \$224.6 per plant
110 Plants

Date as of:
01/10/1990/16:15

SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT
Date Printed: FY 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT
(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

OFFICE OF
AEOD

FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM: Special Safety Reviews

PROGRAM ELEMENT: Diagnostic Evaluations (AEOD)

ACTIVITIES:

1. Conduct Diagnostic Evaluations
of Licensee Performance

349 7.0

350 ✓ 7.0 ✓ G-1 350 7.0

2. Overhead

0 2.0

0 2.0

PROGRAM ELEMENT TOTAL:

349 9.0

350 9.0

PROGRAM ELEMENT: Incident Investigation (AEOD)

ACTIVITIES:

1. Manage Incident Investigation

1 3.0

50 ✓ 3.0 ✓ G-2 50 3.0

2. Overhead

0 1.0

0 1.0

PROGRAM ELEMENT TOTAL:

1 4.0

50 4.0

PROGRAM ELEMENT: NRC Incident Response

ACTIVITIES:

Date as of:
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SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT
Date Printed: FY 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT
(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990	
	\$	FTE	\$	FTE
1. Emergency Response Data System				
AEOD	1,800	1.0	74	1.0
Regions	0	0.0	0	0.0

ACTIVITY TOTAL:	\$1,800	1.0	\$74	1.0
2. Develop and Maintain Response Center Equipment, Procedures, and Analytical Tools				
AEOD	882	4.0	931	4.0
Regions	0	0.0	0	0.0

ACTIVITY TOTAL:	\$882	4.0	\$931	4.0
3. Program Coordination and Development				
AEOD	99	4.0	640	4.0
Regions	0	13.0	0	2.0

ACTIVITY TOTAL:	\$99	17.0	\$640	13.0

Date as of:
01/10/1990/16:15

SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT

Date Printed: FY 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989 FY 1990

\$ FTE \$ FTE

4. Operations Officers

AEOD	0	9.0	0	9.0
Regions	0	0.0	0	0.0
ACTIVITY TOTAL:	\$0	9.0	\$0	9.0

5. Overhead

AEOD	0	7.0	0	7.0
Regions	0	0.0	0	0.0
ACTIVITY TOTAL:	\$0	7.0	\$0	7.0

PROGRAM ELEMENT TOTAL: MRC Incident Response

AEOD	2,781	25.0	1,645	25.0
Regions	0	13.0	0	9.0
TOTAL:	\$2,781	38.0		

Handwritten annotations and calculations:

- A box containing \$1,645 with a checkmark and an arrow pointing to the 1,645 in the table above.
- A box containing 34.0 with a checkmark and an arrow pointing to the 25.0 in the table above.
- A box containing 17.0 with a checkmark and an arrow pointing to the 13.0 in the table above.
- Handwritten text: 9-3 1645 27.0
- Handwritten text: -7.0

SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT
Date Printed: FT 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT
(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

Date as of:
01/10/1990/16:15

FY 1989 FY 1990

	\$	FTE	\$	FTE
--	----	-----	----	-----

PROGRAM ELEMENT: Technical Training Center (AEC03)

ACTIVITIES:

1. Pub/Bar Technology Training	1997	10.0	1,063	10.0
2. Other Specialized Technical Training	622	4.0	707	4.0
3. Administrative Support				
a. Transportation of Things	3	0.0	15	0.0
b. Rent, Comm., Utilities, and Miscellaneous Charges	229	0.0	365	0.0
c. Printing and Reproduction	16	0.0	30	0.0
d. Other Facility Services	45	0.0	85	0.0
e. Supplies and Materials	70	0.0	155	0.0
f. Capital Equipment	6	0.0	25	0.0
ACTIVITY TOTAL:	8367	0.0	9675	0.0

Date as of:
01/10/1990/16:15

SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT
 Date Printed: FY 1991 PRESIDENT'S BUDGET
 01/10/90 DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989 FY 1990

\$	FTE	\$	FTE
----	-----	----	-----

0	0.0	0	0.0
82,019	30.0	82,650	30.0
8367		8675	

PROGRAM ELEMENT TOTAL (Pgm Spt & FTE):
 PROGRAM ELEMENT TOTAL (Adm Spt):

PROGRAM TOTAL: Special Safety Reviews

AECOD (Pgm Spt & FTE)	5,150	68.0	4,695	68.0
Regions (Pgm Spt & FTE)	0	13.0	0	9.0
TOTAL (Pgm Spt & FTE):	5,150	81.0	4,695	77.0
TOTAL (Adm Spt (AECOD)):	8367		8675	

64 2650 22.0

SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT
 Date Printed: **FY 1991 PRESIDENT'S BUDGET**
01/10/90 **DETAILED RESOURCE REPORT**
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

Data as of:
 01/10/1990/16:15

FY 1989		FY 1990	
\$	FTE	\$	FTE
-----		-----	

PROGRAM: Operational Experience Evaluation

PROGRAM ELEMENT: Operational Data Analysis (AEOB)

ACTIVITIES:

1. Analysis of Operational Experience	127	18.0	270	18.0
2. Analysis of Operational Trends and Patterns	1,543	7.0	1,705	7.0
3. Overhead	0	10.0	0	10.0
PROGRAM ELEMENT TOTAL:	1,670	35.0	1,975	35.0

1,975

35.0

10.0

25.0

6.5 1975 25.0

PROGRAM ELEMENT: Performance Indicators (AEOB)

ACTIVITIES:

1. Manage Performance Indicator Activities	400	4.0	900	4.0
2. Overhead	0	1.0	0	1.0
PROGRAM ELEMENT TOTAL:	400	5.0	900	5.0

900

5.0

1.0

4.0

6.6 900 4.0

Data as of:
01/10/1990/16:15

SPECIAL AND INDEPENDENT REVIEWS, INVESTIGATIONS, AND ENFORCEMENT
 Date Printed: **FY 1991 PRESIDENT'S BUDGET**
 01/10/90 **DETAILED RESOURCE REPORT**
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989		FY 1990	
\$	FTE	\$	FTE

PROGRAM ELEMENT: Operational Data Collection and Dissemination (AEOB)

ACTIVITIES:

1. Collect, Screen, and Feed Back Operational Data	1,039	3.0	800	3.0
2. Operational and Reliability Data Systems	1,148	3.0	1,220	3.0
3. Overhead	0	2.0	0	2.0

PROGRAM ELEMENT TOTAL:

	\$2,187	8.0	\$2,020	6.0
	-----	-----	-----	-----

PROGRAM TOTAL: Operational Experience Evaluation

	\$4,345	48.0	\$4,975	48.0
--	---------	------	---------	------

\$2,020
 - 3.0

 6.0

4-7 2020 6.0

PROGRAM: Independent Safety Reviews and Advice

PROGRAM ELEMENT: Advisory Committee on Reactor Safeguards (ACRS)

ACTIVITIES:

1. Reactor Operations and Licensing	16	12.5	116	13.0	56	13.0
2. Future Reactors	2	2.0	22	2.0	22	2.0

COVER SHEET FOR CORRESPONDENCE

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FY 1990

Part 171 Work by Research

A. Generic Efforts - All Plants

	<u>PTS \$</u>	<u>FTE</u>
1. Aging of Reactor Components Aging Research	6321	7.0
2. Engineering Standards Support	450	0.3
3. Seismic Research Applications	850	1.6
4. Plant Response to Ground Motion	469	1.1
5. Structural Integrity	750	0.3
6. Plant Performance - Experiments & Analysis	150	0.3
7. Personnel Performance Measurement	650	0.7
8. The Personnel Subsystem	633	0.9
9. Human-System Interface	1122	1.0
10. Organization and Management	1431	1.0
11. Reliability Assessment - Data Acquisition	190	0.8
12. Data Management Systems	550	1.0
13. HRA/PRA Integration	1107	1.5
14. HRA/PRA Results Application	540	1.2
15. Individual Plant Exams	1400	4.0
16. Reactor Containment Structure Integrity	1800	2.0
17. Regulatory Application of New Source Terms	400	1.0
18. Radiation Protection & Health Effects:		
a. Develop Rules & Guides	794	1.7
b. Radiation Protection Issues	410	1.5
c. Health Effects Research	471	2.0
19. Review of Licensee/Applicant PRA's	190	0
20. Risk Model Development, QA & Maintenance	800	2.0
21. Risk Model Applications	386	0.5
22. Generic & Unresolved Safety Issues:		
a. Engineering Issues	541	7.1
b. Reactor System Issues	230	1.6
c. Human Factors Issues	600	0.7
d. Severe Accident Issues	250	0.7
e. Mgmt of Safety Issue Resolution	400	6.5
23. Regulation Development & Modification	300	3.0
24. Regulatory Analysis of Regulations	1489	3.0
25. Rule for License Renewal	2400	3.5
26. Safety Goal Implementation	150	1.0
27. Independent Review & Control of Rulemaking	0	2.0
	<hr/>	<hr/>
GENERIC EFFORTS - ALL REACTORS - TOTAL	\$28,224	62.5

FTE = 62.5 x \$160 = \$10,000
 PTS \$28,224

Generic Effort - All Reactors - Total = $\frac{\$38,224}{110 \text{ Plants}}$ = \$347.4 per plant

FY 1990

B. <u>Generic Efforts - All Plants Except HTGR</u>	<u>PTS \$</u>	<u>FTE</u>
1. Integrity of Reactor Components:		
a. Pressure Vessel Safety	6509	2.6
b. Piping Integrity	1941	0.5
c. Inspection Procedures & Techniques	1700	0.9
d. Chemical Effects	1844	4.0
2. Aging of Reactor Components:		
a. Aging Research	1138	0.8
3. Engineering Standards Support	182	0.4
4. Reactor Applications - Operating Reactors	1558	1.5
5. LWR Systems Studies	750	1.0
6. Human Factors - Human/System Interface	438	0.3
7. Analysis/Operating Reactor Events	0	0.5
8. Human Factors		
a. The Personnel Subsystem	0	0.2
b. Organization & Management	250	0.3
9. Accident Management		
a. Guidance & Implementation	1790	1.5
b. Strategies	2010	1.3
10. Core Melt Progression & H ₂ Generation	4902	2.0
11. Natural Circulation in the RCS	250	1.0
12. Fuel-Coolant Interaction	650	0
13. FP Behavior & Chemical Form	925	1.0
14. Reactor Containment Safety:		
a. Core Concrete Interaction	1205	0.7
b. Hydrogen Transport & Combustion	425	1.0
c. Integrated Codes & Applications	3660	2.6
15. Reactor Accident Risk Analysis:		
a. Assessment of Plant Risks	100	0.4
b. Review of Licensee/Applicant PRAs	250	0.8
c. Risk Model Development, QA & Maintenance	603	1.0
d. Risk Model Applications	995	1.5
16. Severe Accident Implementation:		
a. External Event Safety Margins	325	1.0
17. Reg. Application of New Source Terms	150	0.5
18. Generic & Unsolved Safety Issues:		
a. Reactor System Issues	313	5.7
	<hr/>	<hr/>
Total (PWRs & BWRs)	34863	35.0

FTE = 35.0 x \$160 = \$ 5,600
 PTS 34,863

Total (RWRs & BWRs) = \$40,463 = \$371.2 per plant
 109 plants

		FY 1990	
		<u>PTS \$</u>	<u>FTE</u>
<u>C. Seismic - All Plants</u>			
1. Seismic & Structural Engineering:			
a. Earth Sciences		2175	1.8
b. Seismic Research Applications		295	0.7
c. Plant Response to Ground Motion		405	0.9
	TOTAL	<u>2875</u>	<u>3.4</u>

FTE = 3.4 x \$160 = \$ 544
 PTS 2,875

Total \$3,419 = \$31.0 per plant
 110 plants

D. Seismic - Plants East of Rockies

1. Seismic & Structural Research:			
a. Earth Sciences		991	1.0

FTE = 1 x \$160 = \$ 160
 PTS 991

Total = \$1,151 = \$11.6 per plant
 99 plants

E. <u>Seismic - Plants West of Rockies</u>	0	0
--	---	---

F. Nuclear Steam Supply System (PWR Only)

1. Integrity of Reactor Components:			
a. Pressure Vessel Safety		60	0
b. Inspection Procedures & Techniques		180	0.1
2. Prevent Reactor Core Damage - Exper. & Anal.		700	1.6
a. Modeling		350	1.3
3. Integrated Codes & Applications		250	0.1
4. Direct Containment Heating		2175	1.0
5. Generic & Unresolved Safety Issues:			
a. Engineering Issues		482	5.1
b. Reactor System Issues		50	0.4
		<u>4247</u>	<u>9.6</u>
TOTAL NSSS - PWR ONLY			

FTE 9.6 x \$160 = \$1,536
 PTS 4,247

Total \$5,783 = \$79.2 per plant
 73 plants

FY 1990

	<u>PTS \$</u>	<u>FTE</u>
<u>G. NSSS - All Large Dry Containments - (PWR's ONLY)</u>		
1. Generic & Unresolved Safety Issues:		
a. Severe Accident Issues	100	0.3
FTE = .3 x \$160 =	\$ 48.0	
PTS	<u>100.0</u>	
Total =	<u>\$148</u>	= \$2.3 per plant
	65 plants	
 <u>H. NSSS - PWR LDC - (Westinghouse ONLY)</u>		
1. Assessment of Plant Risks	100	0.4
FTE = .4 x \$160 =	\$ 64	
PTS	<u>100</u>	
Total =	<u>\$164</u>	= \$3.9 per plant
	42 plants	
 <u>H.1 PWRs ALL ICE CONDENSERS ONLY</u>		
1. Severe Accident Implementation -		
a. Containment Performance Improvements	150	1.2
FTE = 1.2 x \$160 =	\$192	
PTS	<u>150</u>	
Total =	<u>\$342</u>	= \$42.7 per plant
	8 plants	
 <u>I. NSSS LDC (B&W ONLY)</u>		
1. Prevent Reactor Core Damage - Plant Performance:		
a. B&W Testing	300	1.0
b. Experiments & Analysis	50	0.1
2. Reactor Accident Risk Analysis:		
a. Assessment of Plant Risks	50	0.8
	<hr/>	<hr/>
TOTAL	400	1.9

FTE = 1.9 x \$160 = \$304
 PTS 400
 Total = \$704 = \$88.0 per plant
 8 plants

FY 1990

J. NSSS CE - DRY CONTAINMENT

1. Reactor Accident Risk Analysis-Assessment of Plant Risks	PTS \$ <u>100</u>	FTE <u>.8</u>
---	----------------------	------------------

FTE = .8 x \$160 = \$128
PTS 100

Total = $\frac{\$228}{15 \text{ plants}}$ = \$15.2 per plant

K. NSSS (BWR ONLY)

1. Integrity of Reactor Components - Piping Integrity	1096	0.5
2. Prevent Reactor Core Damage:		
a. Modeling	300	1.1
b. Operating Reactors	842	0.5
c. LWR System Studies	0	0
3. Accident Management - Strategies	200	0.2
4. Reactor Containment Safety - Integrated Codes & Appls	350	0.3
TOTAL	<u>2788</u>	<u>2.6</u>

FTE = 2.6 x \$160 = \$416
PTS 2788

Total = $\frac{\$3204}{37 \text{ plants}}$ = \$86.6 per plant

L. GE - MARK I

1. Reactor Containment Safety - Core/Concrete Interactions	700	0.3
--	-----	-----

FTE = .3 x \$160 = \$ 48
PTE 700

Total = $\frac{\$748}{24 \text{ plants}}$ = \$31.2 per plant

M. GE - MARK II

1. Reactor Accident Risk Analysis-Assessment of Plant Risks	123	0.2
---	-----	-----

FTE = .2 x \$160 = \$ 32
PTS 123

Total = $\frac{\$155}{9 \text{ plants}}$ = \$17.2 per plant

		FY 1990	
		<u>PTS\$</u>	<u>FTE</u>
N. <u>GE - MARK II & III</u>			
1. Severe Accident Implementation - Containment:			
a. Performance Improvements		200	1.3
FTE =	1.3 x \$160 =	\$208	
PTS		<u>200</u>	
Total	=	<u>\$408</u>	= \$31.3 per plant
		13 plants	

O. <u>GE - MARK III ONLY</u>			
1. Assessment of Plant Risks		100	0.4
FTE =	.4 x \$160 =	\$ 64	
PTS		<u>100</u>	
Total	=	<u>\$164</u>	= \$41.0 per plant
		4 plants	

OFFICE OF
RESEARCH

NUCLEAR SAFETY RESEARCH
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

Date Printed:
01/10/90

10:00 of:
/10/90/16:00

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1990

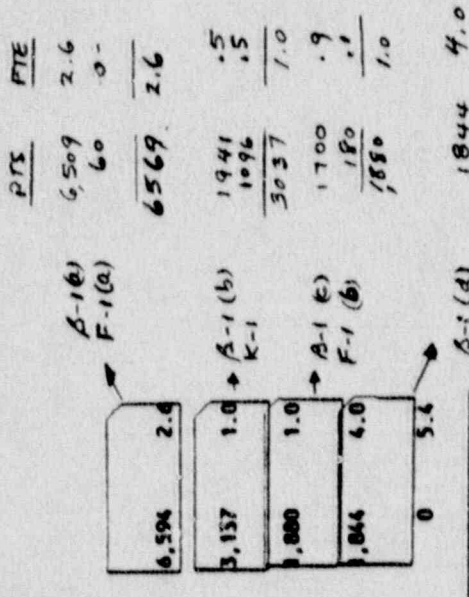
\$ FTE \$ FTE

4: Integrity of Reactor Components

RAW ELEMENT: Reactor Vessel and Piping Integrity (RES)

ACTIVITIES:

Pressure Vessel Safety	7,829	2.6
Piping Integrity	2,666	1.0
Inspection Procedures and Techniques	1,701	1.0
Chemical Effects	1,980	4.0
Overhead	0	5.4
RAW ELEMENT TOTAL:	\$16,176	16.0



to as of:
/10/90/16:00

NUCLEAR SAFETY RESEARCH
 Date Printed: **FY 1991 PRESIDENT'S BUDGET**
01/10/90 **DETAILED RESOURCE REPORT**
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990			
	\$	FTE	\$	FTE		
RAM ELEMENT: Aging of Reactor Components (RES)						
ACTIVITIES:						
Aging Research	7,117	7.8	7,459	7.8	A-1 6321	7.0
Overhead	0	4.2	0	4.2	B-2 1138	.8
					<u>7,459</u>	<u>7.8</u>
RAM ELEMENT TOTAL:	87,117	12.0	87,459	12.0		
RAM ELEMENT: Engineering Standards Support (RES)						
ACTIVITIES:						
Engineering Standards Support	1,068	0.7	632	0.7	A-2 450	.3
Overhead	0	0.3	0	0.3	B-3 182	.4
					<u>632</u>	<u>.7</u>
RAM ELEMENT TOTAL:	81,068	1.0	8632	1.0		

Date as of:
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NUCLEAR SAFETY RESEARCH
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990			
	\$	FTE	\$	FTE		
PROGRAM ELEMENT: Seismic and Structural Research (RES)						
ACTIVITIES:						
1. Earth Sciences	3,316	4.8	3,251	2.8	C-13	2175 1.8
2. Seismic Research Applications	2,839	2.6	1,175	2.3	D-13	991 1.0
3. Plant Response to Ground Motion	998	1.7	874	2.0		3166 2.8
4. Structural Integrity	575	0.0	750	0.3	A-3	850 1.6
5. Overhead	0	3.9	0	3.6	C-26	295 .7
PROGRAM ELEMENT TOTAL:	87,728	13.9	86,050	11.0		1145 2.3
PROGRAM TOTAL: Integrity of Reactor Components	830,089	40.0	827,596	38.0	A-4	469 1.1
					C-1c	405 .9
						874 2.0
					A-5	750 .3

as of:
1/10/90/16:00

NUCLEAR SAFETY RESEARCH
Date Printed: FY 1990 BUDGET
01/10/90 DETAILED RESOURCE REPORT
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989		FY 1990	
\$	FTE	\$	FTE

AN: Preventing Damage to Reactor Cores

GRAN ELEMENT: Plant Performance (RES)

ACTIVITIES:

BBM Testing	1,183	1.0
Experiments and Analysis	2,686	1.6
Modeling	3,696	2.6
Overhead	0	3.0
GRAN ELEMENT TOTAL:	\$7,565	9.0

300	1.0	I-1(a) 300 1.0
900	2.0	A-6 150 .3
550	2.4	F-2 700 1.6
0	2.6	I-1(b) 50 .1
		900 2.0
		F-2(a) 350 1.3
		K-2(a) 300 1.1
		650 2.4

Date as of:
01/16/90/16:00

NUCLEAR SAFETY RESEARCH
FY 1991 PRESIDENT'S BUDGET
01/10/90
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989	FY 1990
\$		
FTE		

PROGRAM ELEMENT: Reactor Applications (RES)

ACTIVITIES:					
1. Operating Reactors	1,632	1.0	2,400	2.0	1558 1.5
2. LWR Systems Studies	95	2.0	750	1.0	842 .5
3. Analysis/Operating Reactor Events	515	0.0	0	0.5	750 1.0
4. Overhead	0	1.0	0	2.5	750 1.0
PROGRAM ELEMENT TOTAL:	\$2,242	4.0	\$3,150	6.0	0 .5

NUCLEAR SAFETY RESEARCH
 FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

Date Printed:
 01/10/90

to as of:
 /10/90/16:00

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989 FY 1990

\$ FTE \$ FTE

BAR ELEMENT: Human Factors (RES)

ACTIVITIES:

Personnel Performance Measurement	639	1.0	755	0.2	A-7	450	.7
The Personnel Subsystem	300	1.1	633	1.1	A-8	633	.9
Human-System Interface	1,300	1.5	1,560	1.3	B-8(a)	0	-.2
Organization and Management	1,244	1.4	1,681	1.3		633	1.1
Overhead	0	3.0	0	2.5	A-9	1122	1.0
					A-6	439	.3
						1560	1.3
BAR ELEMENT TOTAL:	33,563	8.0	94,629	7.0	A-10	1731	1.0
					B-8(b)	250	.3
						1681	1.3

etc as of:
1/10/90/16:00

NUCLEAR SAFETY RESEARCH
Date Printed: FY 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990			
	\$	FTE	\$	FTE		
AN ELEMENT: Reliability Assessment						
ACTIVITIES:						
- Data Acquisition and Quantification	90	0.5	190	0.8	A-11	190 .8
- Data Management Systems	655	1.0	550	1.0	A-12	550 1.0
- NRA/PRA Integration	735	1.4	1,107	1.5	A-13	1107 1.5
- NRA/PRA Results Application	956	2.1	540	1.2	A-14	540 1.2
- Overhead	0	3.0	0	2.5		
PROGRAM ELEMENT TOTAL:	22,436	8.0	22,387	7.0		

NUCLEAR SAFETY RESEARCH
 FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

Date Printed:
 01/10/90

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989	FY 1990
\$		\$
FTE		FTE

PROGRAM ELEMENT: Accident Management (RES)

ACTIVITIES:					
Guidance and Implementation	655	2.5	1,790	1.5	B-9(a) 1790 1.5
Strategies	1,703	1.5	2,210	1.5	B-9(b) 2010 1.3 K-3 200 .2
Overhead	0	2.0	0	2.0	2210 1.5

PROGRAM ELEMENT TOTAL:

\$2,358 6.0

GRAND TOTAL: Preventing Damage to Reactor Cores

\$18,164 35.0

NUCLEAR SAFETY RESEARCH
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Date Printed:
 01/10/90

Site as of:
 1/10/90/16:00

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989

FY 1990

\$ FTE \$ FTE

AM: Reactor Containment Performance

GRAM ELEMENT: Core Melt and Reactor Coolant System Failure (RES)

CIVILITIES:

1. Core Melt Progression and Hydrogen Generation	4,006	2.0	4,902	2.0
2. Natural Circulation in Reactor Coolant System	420	1.0	250	1.0
3. Fuel-Coolant Interaction	418	0.0	650	0.0
4. Fission Product Behavior and Chemical Form	1,166	1.0	925	1.0
5. Overhead	0	2.0	0	2.0
GRAM ELEMENT TOTAL:	86,090	6.0	86,727	6.0

NUCLEAR SAFETY RESEARCH
 FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

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to on of:
 /10/90/16:00

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1990

\$ FTE

RAM ELEMENT: Reactor Containment Safety (RES)

Core/Concrete Interaction	2,129	1.0	1,905	1.0	1205	0.7
Direct Containment Heating	1,906	1.0	2,175	1.0	700	0.3
Hydrogen Transport and Combustion	660	1.0	425	1.0	1905	1.0
Integrated Codes and Applications	4,771	3.0	4,260	3.0	2175	1.0
Overhead	0	4.0	0	4.0	425	1.0
RAM ELEMENT TOTAL:	99,466	10.0	98,765	10.0	3660	2.6

RAM ELEMENT: Reactor Containment Structural Integrity (RES)

Structural Tests	2,457	2.3	1,800	2.0	1500	2.0
Overhead	0	0.7	0	1.0		
RAM ELEMENT TOTAL:	92,457	3.0	91,000	3.0	4,260	3.0

NUCLEAR SAFETY RESEARCH
 FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

Date Printed:
 01/10/90

etc on of:
 1/10/90/16:00

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1990

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GRAN ELEMENT: Reactor Accident Risk Analysis (RES)

ACTIVITIES:

1. Review of Licensee/Applicant PRAs 003 4.0

2. Assessment of Plant Risk 3,607 3.0

3. Risk Model Development, QA, and Maintenance 1,935 3.0

4. Risk Model Applications 1,517 2.0

5. Overhead 0 6.0

GRAN ELEMENT TOTAL: 97,862 18.0

FOR TOTAL: Reactor Containment Performance 925,875 37.0

A-14	190	0
B-15(b)	250	.8
A	285	.5
Q	150	.2
R	45	0
T	250	.5
	1450	2.5
B-15(a)	100	.4
H-1	100	.4
I-2(a)	50	.1
J-1	100	.4
M-1	123	.2
O-1	100	.4
	573	3.0

A-20	800	2.0
B-15(c)	603	1.0
	1403	3.0

A-21	356	.5
B-15(d)	995	1.5
	1351	2.0

do as of:
1/10/80/16:00

NUCLEAR SAFETY RESEARCH
FY 1991 PRESIDENT'S BUDGET
01/10/80
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989	FY 1990	FY 1991	
	\$	FTE	\$	FTE
ACTIVITIES:				
Materials and Engineering	1,001	2.5	914	2.5
Biotechnology and Biochemistry	345	2.0	375	2.0
Compliance, Assessment, and Modeling	406	1.5	303	1.5
Support of Subcontracting	0	1.0	0	1.5
Overhead	0	4.0	0	4.5
GR TOTAL:	81,030	11.0	81,672	12.0

NS: Confirming the Safety of Low-Level Waste Disposal (NSB)

NUCLEAR SAFETY RESEARCH

FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

Date Printed:
 01/10/90

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989

FY 1990

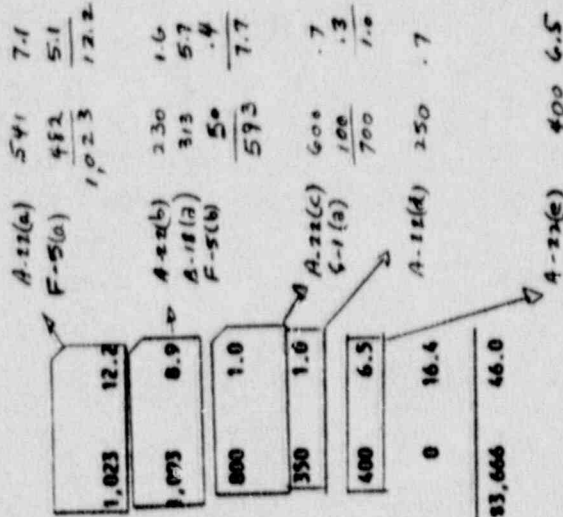
S FTE S FTE

Resolving Safety Issues and Developing Regulations

ISSUE ELEMENT: Generic and Unresolved Safety Issues (RES)

ACTIVITIES:

Engineering Issues	1,033	12.2	1,023	12.2
Reactor System Issues	1,707	11.4	1,073	8.9
Human Factors Issues	453	1.0	800	1.0
Severe Accident Issues	0	1.0	350	1.6
Impact of Safety Issues Resolution	422	1.5	400	6.5
Overhead	0	17.9	0	16.4
ISSUE ELEMENT TOTAL:	83,615	50.0	93,666	46.0



File as of:
1/10/90/16:00

NUCLEAR SAFETY RESEARCH

Date Printed: FY 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-time Equivalents)

	FY 1989		FY 1990	
	\$	FTE	\$	FTE
GRAM ELEMENT: Standardized and Advanced Reactors (RES)				
ACTIVITIES:				
Review DOE Advanced Reactor Concepts	850	4.0	500	3.5
Licensing Criteria	613	1.0	250	2.0
Plant Standardization	0	0.5	0	0.5
Overhead	0	3.5	0	3.0
GRAM ELEMENT TOTAL:	1,463	9.0	750	9.0

etc as of:
1/10/90/15:00

NUCLEAR SAFETY RESEARCH
Date Printed: **FY 1991 PRESIDENT'S BUDGET**
01/10/90 **DETAILED RESOURCE REPORT**
(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990	
	\$	FTE	\$	FTE
GRAM ELEMENT: Fuel Cycle, Materials, Transportation, and Safeguards (RES)				
ACTIVITIES:				
. Fuel Cycle	50	1.5	200	1.5
. Transportation	0	1.0	100	1.0
. Safeguards	0	1.0	0	1.0
. Materials Safety	165	1.4	225	1.4
. Overhead	0	3.1	0	3.1
GRAM ELEMENT TOTAL:	\$215	8.0	\$525	8.0

NUCLEAR SAFETY RESEARCH
 FY 1991 PRESIDENT'S BUDGET
 DETAILED RESOURCE REPORT

Date Printed:
 01/10/90

Date as of:
 01/10/90/16:00

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1990

FY 1990

\$

\$

FTE

FTE

PROGRAM ELEMENT: Developing and Improving Regulations (RES)

ACTIVITIES:

ACTIVITY	FY 1990 (\$)	FY 1990 (FTE)	FY 1990 (\$)	FY 1990 (FTE)
1. Regulation Development/Modification	300	5.0	300	5.0
2. Independent Review and Control of Rulemaking	0	2.0	0	2.0
3. Regulatory Analysis of Regulations	1,409	3.0	1,489	3.0
4. Rule for License Renewal	2,400	3.5	2,400	3.5
5. Safety Goal Implementation	150	1.0	150	1.0
6. Research Educational Grants	1,065	0.0		
7. Small Business Innovation Research	500	0.0		
8. Overhead	0	7.0	0	8.5
PROGRAM ELEMENT TOTAL:	5,824	19.0	5,839	23.0

Date as of:
01/10/90/16:00

NUCLEAR SAFETY RESEARCH
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT

(Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989 FY 1990

	\$	FTE	\$	FTE
1. Containment Performance Improvements	1,605	2.0	350	2.5
2. Regulatory Application of New Source Terms	0	6.0	550	1.5
3. Individual Plant Examinations	70	1.1	1,400	4.0
4. External Event Safety Margins	534	0.4	325	1.0
5. Overhead	0	5.5	0	5.0
PROGRAM ELEMENT TOTAL:	2,209	15.0	82,625	14.0

PROGRAM ELEMENT: Severe Accident Implementation (RES)

ACTIVITIES:

1. Containment Performance Improvements	1,605	2.0	350	2.5	Mob(1)A, 150	1.2
					M-13	1.3
						<u>2.5</u>
2. Regulatory Application of New Source Terms	0	6.0	550	1.5	A-17	1.0
					A-17	5
						<u>1.5</u>
3. Individual Plant Examinations	70	1.1	1,400	4.0	A-15	4.0
4. External Event Safety Margins	534	0.4	325	1.0	A-16a	1.0
5. Overhead	0	5.5	0	5.0		

note as of:
11/10/90/16:00

NUCLEAR SAFETY RESEARCH
Date Printed: FY 1991 PRESIDENT'S BUDGET
01/10/90 DETAILED RESOURCE REPORT
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

	FY 1989		FY 1990			
	\$	FTE	\$	FTE		
PROGRAM ELEMENT: Radiation Protection and Health Effects (RES)						
ACTIVITIES:						
1. Radiation Protection Issues	854	3.0	610	2.0	A-15(b) 410	1.5
2. Health Effects Research	461	2.0	471	2.0	A-18(c) 471	2.0
3. Development of Rules and Regulatory Guidance	1,336	1.5	1,044	2.1	A-18(b) 794	1.7
4. Overhead	0	2.5	0	2.9		
PROGRAM ELEMENT TOTAL:	22,651	9.0	22,125	9.0		
PROGRAM TOTAL: Resolving Safety Issues and Developing Regulations	\$15,162	110.0	\$15,675	109.0		

Date as of:
01/10/90/16:00

NUCLEAR SAFETY RESEARCH
FY 1991 PRESIDENT'S BUDGET
DETAILED RESOURCE REPORT
 (Program Support Dollars in Thousands, Staff Years in Full-Time Equivalents)

FY 1989 FY 1990

	\$	FTE	\$	FTE
Direct Resources	91,120	151.0	83,254	146.0 ✓
Overhead	0	82.0	0	82.0
MISSION AREA TOTAL:	91,120	233.0	83,254	228.0

ON AREA SUBTOTALS:

Direct Resources

Overhead

MISSION AREA TOTAL:



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

FEB 27 1990

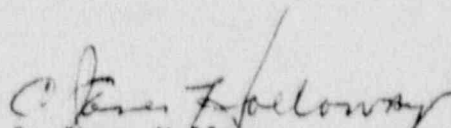
MEMORANDUM FOR: Mary Ann Riggs
Fiscal Section
Program Management and Policy Development
Analysis Staff
Office of Nuclear Regulatory Research

FROM: C. James Holloway, Assistant for Fee Policy and Rules
Office of the Controller

SUBJECT: UPDATE OF RESEARCH FY 1990 PART 171 RESOURCES

This will confirm my telephone conversation with you on February 26, 1990 concerning Ray Gustave's February 1, 1990 memo to L. Hiller concerning the above subject. You indicated that two changes should be made:

1. Item I. NSSS LDC (B&W only) - The line item "Operating Reactors" should be deleted.
2. Item K. NSSS (BWR only) - The line item "Operating Reactors" appearing under the heading Prevent Reactor Core Damage should be changed to read: \$842,000 under the PTS column and .5 under the FTE column.


C. James Holloway
Assistant for Fee Policy and Rules
Office of the Controller

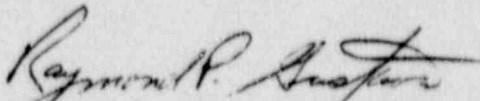


UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 1, 1990

MEMORANDUM FOR: Lee Hiller, Deputy Controller
FROM: Raymond P. Gustave, Section Leader, Fiscal Section, PMPDAS/RES
SUBJECT: UPDATE OF RES FY 1990 PART 171 RESOURCES

Per your request, enclosed is an updated copy of the RES FY 1990 resources by Part 171 License Fee Recovery codes. If you have any questions, contact me on extension 23609.


Raymond P. Gustave, Section Leader
Fiscal Section
Program Management, Policy Development
and Analysis Staff
Office of Nuclear Regulatory Research

Enclosure: As stated

UPDATED 1/30/90

	FY 90	
<u>Part 171 Work by Research</u>	<u>PTS \$</u>	<u>FTE</u>
<u>A. Generic Efforts - All Plants</u>		
Aging of Reactor Components Aging Research	6321	7.0
Engineering Standards Support	450	0.3
Seismic Research Applications	850	1.6
Plant Response to Ground Motion	469	1.1
Structural Integrity	750	0.3
Plant Performance - Experiments & Analysis	150	0.3
Personnel Performance Measurement	650	0.7
The Personnel Subsystem	633	0.9
Human-System Interface	1122	1.0
Organization and Management	1431	1.0
Reliability Assessment - Data Acquisition	190	0.8
Data Management Systems	550	1.0
HRA/PRA Integration	1107	1.5
HRA/PRA Results Application	540	1.2
Individual Plant Exams	1400	4.0
Reactor Containment Structural Integrity	1800	2.0
Regulatory Application of New Source Terms	400	1.0
Radiation Protection & Health Effects:		
Develop Rules & Guides	794	1.7
Radiation Protection Issues	410	1.5
Health Effects Research	471	2.0
Review of Licensee/Applicant PRAs	190	0
Risk Model Development, QA & Maintenance	800	2.0
Risk Model Applications	386	0.5
Generic & Unresolved Safety Issues:		
Engineering Issues	541	7.1
Reactor System Issues	230	1.6
Human Factors Issues	600	0.7
Severe Accident Issues	250	0.7
Mgmt of Safety Issue Resolution	400	6.5
Regulation Development & Modification	300	3.0
Regulatory Analysis of Regulations	1489	3.0
Rule for License Renewal	2400	3.5
Safety Goal Implementation	150	1.0
Independent Review & Control of Rulemaking	0	2.0
	<hr/>	<hr/>
GENERIC EFFORTS - ALL REACTORS - TOTAL	28224	62.5

	<u>PTS \$</u>	<u>FTE</u>
B. <u>Generic Efforts - All Plants Except HTGR</u>		
Integrity of Reactor Components:		
Pressure Vessel Safety	6509	2.6
Piping Integrity	1941	0.5
Inspection Procedures & Techniques	1700	0.9
Chemical Effects	1844	4.0
Aging of Reactor Components:		
Aging Research	1138	0.8
Engineering Standards Support	182	0.4
Reactor Applications - Operating Reactors	1558	1.5
LWR Systems Studies	750	1.0
Human Factors - Human/System Interface	438	0.3
Analysis/Operating Reactor Events	0	0.5
Human Factors - The Personnel Subsystem	0	0.2
- Organization & Management	250	0.3
Accident Management - Guidance & Implementation	1790	1.5
Strategies	2010	1.3
Core Melt Progression & H ₂ Generation	4902	2.0
Natural Circulation in the RCS	250	1.0
Fuel-Coolant Interaction	650	0
FP Behavior & Chemical Form	925	1.0
Reactor Containment Safety:		
Core Concrete Interaction	1205	0.7
Hydrogen Transport & Combustion	425	1.0
Integrated Codes & Applications	3660	2.6
Reactor Accident Risk Analysis:		
Assessment of Plant Risks	100	0.4
Review of Licensee/Applicant PRAs	250	0.8
Risk Model Development, QA & Maintenance	603	1.0
Risk Model Applications	995	1.5
Severe Accident Implementation:		
External Event Safety Margins	325	1.0
Reg Application of New Source Terms	150	0.5
Generic & Unresolved Safety Issues:		
Reactor System Issues	313	5.7
	<hr/>	<hr/>
TOTAL (PWRs & BWRs)	34863	35.0

	<u>PTS \$</u>	<u>FTE</u>
C. <u>Seismic - All Plants</u>		
Seismic & Structural Engineering:		
Earth Sciences	2175	1.8
Seismic Research Applications	295	0.7
Plant Response to Ground Motion	405	0.9
	<hr/>	<hr/>
TOTAL	2875	3.4
D. <u>Seismic - Plants East of Rockies</u>		
Seismic & Structural Research:		
Earth Sciences	991	1.0
E. <u>Seismic - Plants West of Rockies</u>	0	0
F. <u>Nuclear Steam Supply System (PWR Only)</u>		
Integrity of Reactor Components:		
Pressure Vessel Safety	60	0
Inspection Procedures & Techniques	180	0.1
Prevent Reactor Core Damage - Experiments & Analysis	700	1.6
Modeling	350	1.3
Integrated Codes & Applications	250	0.1
Direct Containment Heating	2175	1.0
Generic & Unresolved Safety Issues:		
Engineering Issues	482	5.1
Reactor System Issues	50	0.4
	<hr/>	<hr/>
TOTAL NSSS - PWR ONLY	4247	9.6
G. <u>NSSS - All Large Dry Containments - (PWRs ONLY)</u>		
Generic & Unresolved Safety Issues:		
Severe Accident Issues	100	0.3
H. <u>NSSS PWR LDC - (Westinghouse Only)</u>		
Assessment of Plant Risks	100	0.4
H.1 <u>PWRs ALL ICE CONDENSERS ONLY</u>		
Severe Accident Implementation -		
Containment Performance Improvements	150	1.2

	<u>PTS \$</u>	<u>FTE</u>
<u>I. NSSS LDC (B&W ONLY)</u>		
Prevent Reactor Core Damage - Plant Performance:		
B&W Testing	300	1.0
Experiments & Analysis	50	0.1
Operating Reactors	400 0	0.2 0
Reactor Accident Risk Analysis:		
Assessment of Plant Risks	50	0.8
TOTAL	800 400	2.2 1.9
<u>J. NSSS CE - LARGE DRY CONTAINMENTS</u>		
Reactor Accident Risk Analysis-Assessment of Plant Risks	100	0.8
<u>K. NSSS - (BWR ONLY)</u>		
Integrity of Reactor Components - Piping Integrity	1096	0.5
Prevent Reactor Core Damage:		
Modeling	300	1.1
Operating Reactors	442 842	0.2 .5
LWR System Studies	0	0
Accident Management - Strategies	200	0.2
Reactor Containment Safety - Integrated Codes & Appls	350	0.3
TOTAL	2388 2788	3.1 2.6 ✓
<u>L. GE - MARK I</u>		
Reactor Containment Safety - Core/Concrete Interactions	700	0.3
<u>M. GE - MARK II</u>		
Reactor Accident Risk Analysis-Assessment of Plant Risks	123	0.2
<u>N. GE - MARK II & III</u>		
Severe Accident Implementation - Containment		
Performance Improvements	200	1.3
<u>O. GE - MARK III ONLY</u>		
Assessment of Plant Risks	100	0.4
<u>P. Plant Specific - To Be Determined</u>		
Review of Licensee/Applicant PRAs	285	0.5

		<u>PTS \$</u>	<u>FTE</u>
Q.	<u>Plant Specific WAPWR - FDA (W)</u> Review of Licensee/Applicant PRAs	150	0.2
R.	<u>Plant Specific Diablo Canyon (W)</u> Review of Licensee/Applicant PRAs	45	0
S.	<u>Plant Specific CESSAR 80 PLUS (CE)</u> Review of Licensee/Applicant PRAs	200	0.5
T.	<u>Plant Specific Advanced BWR (GE)</u> Review of Licensee/Applicant PRAs	330	0.5

NRC Form 8-C
(4-79)
NRCM 0240

COVER SHEET FOR CORRESPONDENCE

Use this Cover Sheet to Protect Originals of Multi-Page Correspondence.

NUMBER OF
LICENSED OPERATING REACTORS

Westinghouse	51
General Electric	38
Combustion Engineering	15
Babcock & Wilcox	9
General Atomic-HTGR	1
TOTAL	<u>114</u>

LESS: ^{1/}

Yankee Rowe	- 1	Westinghouse Dry Containment
Big Rock Point	- 1	GE BWR Dry Ambient Containment
TMI-2	- 1	B&W Dry Containment
Ft. St. Vrain	- 1	High Temperature Gas Cooled
SUB TOTAL	<u>- 4</u>	
TOTAL REACTORS	<u>110</u>	

^{1/} These licensed reactors have not been included in the fee base since historically they have been granted either full or partial exemptions from the annual fees.

NRC Form B-C
(4-79)
NRCM D240

COVER SHEET FOR CORRESPONDENCE

Use this Cover Sheet to Protect Originals of Multi-Page Correspondence.

Part 171 Fees By Reactor Category - Summary

(Fees in Millions)

WITH MINOR ADJUSTMENTS FOR PLANTS WEST OF ROCKIES OR WESTINGHOUSE PLANTS WITH ICE
CONDENSERS THE FOLLOWING APPLY TO PLANT/CONTAINMENT

TYPE	NUMBER	BUDGET BASE X .80	FEE	TOTAL COLLECTED
WESTINGHOUSE (Dry Containment)	(42)	\$1.276	\$1.021	\$ 42.9
WESTINGHOUSE (Ice Condensers)	(8)	1.313	1.050	8.4
CE	(15)	1.287	1.030	15.5
B&W	(8)	1.360	1.088	8.7
GE MARK I	(24)	1.309	1.047	25.1
GE MARK II	(9)	1.326	1.061	9.6
GE MARK III	(4)	1.350	1.080	4.3
TOTAL	110			\$114.5

FEE BASIS BY VENDOR/CONTAINMENT TYPE - SUMMARY

(\$000)

ALL WESTINGHOUSE - LARGE DRY CONTAINMENT (42)*	\$1,179	(ALL)
	79	(ALL PWR)
	2	(ALL PWR-LDC)
	4	(ALL WESTINGHOUSE LDC)
	12	(EAST OF ROCKIES)
TOTAL	\$1,276	
ALL WESTINGHOUSE - ICE CONDENSERS (8)	\$1,179	(ALL)
	79	(ALL PWR)
	43	(ALL WESTINGHOUSE ICE CONDENSERS)
	12	(EAST OF ROCKIES)
TOTAL	\$1,313	

ALL CE's (15)*	\$1,179	(ALL)
	79	(ALL PWR)
	2	(ALL PWR-LDC)
	15	(ALL CE)
	12	(EAST OF ROCKIES)

TOTAL \$1,287

ALL B&W's (8)*	\$1,179	(ALL)
	79	(ALL PWR)
	2	(ALL PWR-LDC)
	88	(ALL B&W)
	12	(EAST OF ROCKIES)

TOTAL \$1,360

ALL GE MARK I (24)	\$1,179	(ALL)
	87	(ALL BWR)
	31	(MARK I)
	12	(EAST OF ROCKIES)

TOTAL \$1,309

ALL GE MARK II (9)*	\$1,179	(ALL)
	87	(ALL BWR)
	17	(ALL MARK II)
	31	(MARK II/III)
	12	(EAST OF ROCKIES)

TOTAL \$1,326

ALL MARK III (4)	\$1,179	(ALL)
	87	(ALL BWR)
	31	(MARK II/II)
	41	(MARK III ONLY)
	12	(EAST OF ROCKIES)

TOTAL \$1,350

* All except plants west of Rockies which pay \$12,000 less.

FEE BASIS BY CATEGORY - SUMMARY
(\$000)

ALL PLANTS (110)	\$1,179
ALL PWRs	79
+ PWR's with LDC	2
+ WESTINGHOUSE - LDC	4
+ WESTINGHOUSE - ICE CONDENSERS	43
+ ALL B&W's	88
or	
ALL CE's	15
ALL BWR's	87
+ ALL MARK I	31
+ ALL MARK II	17
+ ALL MARK II & III	31
+ ALL MARK III	41
ALL PLANTS EAST OF ROCKIES (SEISMIC)	12

Determination of
Annual Fees By Reactor Type

I. Pressurized Water Reactors

A. Westinghouse Reactors (50 reactors)

1. <u>Large Dry Containment</u> (42)	<u>East of Rockies</u> (38)	<u>West of Rockies</u> (4)
All Plants	\$1,179,000	\$1,179,000
All PWR's	79,000	79,000 ^{1/}
East of Rockies	12,000	--
Large Dry Containment	2,000	2,000
Westinghouse Large Dry Containment	4,000	4,000
	<hr/>	<hr/>
Totals	\$1,276,000	\$1,264,000
	<u>X .80 (M Factor)</u>	<u>X .80 (H Factor)</u>
	\$1,021,000	\$1,011,000

2. Ice Condensers (8 reactors)

All Plants	\$1,179,000
All PWRs	79,000
East of Rockies	12,000
Ice Condensers	43,000
	<hr/>
Totals	\$1,313,000
	<u>X .80</u>
	\$1,050,000

B. Combustion Engineering
Reactors (15 reactors)

	<u>East of Rockies</u> (10)	<u>West of Rockies</u> (5)
All Plants	\$1,179,000	\$1,179,000
All PWRs	79,000	79,000
All CE Plants	15,000	15,000 ^{2/}
East of Rockies	12,000	--
Large Dry Containment	2,000	2,000
	<hr/>	<hr/>
Totals	\$1,287,000	\$1,275,000
	<u>X .80</u>	<u>X .80</u>
	\$1,030,000	\$1,020,000

^{1/} Four reactors West of Rockies -
Diablo Canyon 1 and 2, San Onofre 1, Trojan

^{2/} Five reactors West of Rockies -
Palo Verde 1, 2 and 3, San Onofre 2 and 3

C. Babcock & Wilcox Reactors (8 reactors)

	<u>East of Rockies (7)</u>	<u>West of Rockies (1)</u>
All Plants	\$1,179,000	\$1,179,000
All PWR's	79,000	79,000
All B&W plants	88,000	88,000
East of Rockies	12,000	-- ^{3/}
Large Dry Containment	<u>2,000</u>	<u>2,000</u>
Totals	\$1,360,000 <u>X .80</u>	\$1,348,000 <u>X .80</u>
	\$1,088,000	\$1,078,000

II. Boiling Water Reactors (37 reactors) East of Rockies (36) West of Rockies (1)

A. Mark I Containment (24 reactors)

All Plants	\$1,179,000	\$1,179,000
All BWR's	87,000	87,000
All Mark I	31,000	31,000
East of Rockies	<u>12,000</u>	<u>-</u>
Totals	\$1,309,000 <u>X .80</u>	\$1,297,000 <u>X .80</u>
	\$1,047,000	\$1,038,000

B. Mark II Containment (9 reactors)

All Plants	\$1,179,000	\$1,179,000
All BWR's	87,000	87,000
All Mark II	17,000	17,000
All Mark II & III	31,000	31,000
East of Rockies	<u>12,000</u>	<u>--</u> ^{4/}
	\$1,326,000 <u>X .80</u>	\$1,314,000 <u>X .80</u>
	\$1,061,000	\$1,051,000

^{3/} One reactor West of Rockies - Rancho Seco

^{4/} One reactor West of Rockies - WNP-2

C. Mark III Containment (4 reactors)

	<u>East of Rockies</u>	<u>West of Rockies</u>
All Plants	\$1,179,000	\$1,179,000
All BWR's	87,000	87,000
All Mark II & III	31,000	31,000
All Mark III only	41,000	41,000
East of Rockies	<u>12,000</u>	<u>--</u>
	\$1,350,000	\$1,338,000
	<u>X .80</u>	<u>X .80</u>
	\$1,080,000	\$1,070,000

COVER SHEET FOR CORRESPONDENCE

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Annual Fees For Operating Power Reactors

<u>Westinghouse Reactors</u>	<u>Containment Type</u>	<u>Annual Fee</u>
1. Beaver Valley 1	PWR-Large Dry Containment	\$1,021,000
2. Beaver Valley 2	"	1,021,000
3. Braidwood 1	"	1,021,000
4. Braidwood 2	"	1,021,000
5. Byron 1	"	1,021,000
6. Byron 2	"	1,021,000
7. Callaway 1	"	1,021,000
8. Diablo Canyon 1	"	1,011,000
9. Diablo Canyon 2	"	1,011,000
10. Farley 1	"	1,021,000
11. Farley 2	"	1,021,000
12. Ginna	"	1,021,000
13. Haddam Neck	"	1,021,000
14. Harris 1	"	1,021,000
15. Indian Point 2	"	1,021,000
16. Indian Point 3	"	1,021,000
17. Kewaunee	"	1,021,000
18. Millstone 3	"	1,021,000
19. North Anna 1	"	1,021,000
20. North Anna 2	"	1,021,000
21. Point Beach 1	"	1,021,000
22. Point Beach 2	"	1,021,000
23. Prairie Island 1	"	1,021,000
24. Prairie Island 2	"	1,021,000
25. Robinson 2	"	1,021,000
26. Salem 1	"	1,021,000
27. Salem 2	"	1,021,000
28. San Onofre 1	"	1,011,000
29. Seabrook 1	"	1,021,000
30. South Texas 1	"	1,021,000
31. South Texas 2	"	1,021,000
32. Summer 1	"	1,021,000
33. Surry 1	"	1,021,000
34. Surry 2	"	1,021,000
35. Trojan	"	1,011,000
36. Turkey Point 3	"	1,021,000
37. Turkey Point 4	"	1,021,000
38. Vogtle 1	"	1,021,000
39. Vogtle 2	"	1,021,000
40. Wolf Creek 1	"	1,021,000
41. Zion 1	"	1,021,000
42. Zion 2	"	1,021,000
43. Catawba 1	PWR-Ice Condenser	1,050,000
44. Catawba 2	"	1,050,000
45. Cook 1	"	1,050,000
46. Cook 2	"	1,050,000
47. McGuire 1	"	1,050,000
48. McGuire 2	"	1,050,000
49. Sequoyah 1	"	1,050,000
50. Sequoyah 2	"	1,050,000

Combustion Engineering
Reactors

	<u>Containment Type</u>	<u>Annual Fee</u>
1. Arkansas 2	PWR-Large Dry Containment	\$1,030,000
2. Calvert Cliffs 1	"	1,030,000
3. Calvert Cliffs 2	"	1,030,000
4. Ft. Calhoun 1	"	1,030,000
5. Maine Yankee	"	1,030,000
6. Millstone 2	"	1,030,000
7. Palisades	"	1,030,000
8. Palo Verde 1	"	1,020,000
9. Palo Verde 2	"	1,020,000
10. Palo Verde 3	"	1,020,000
11. San Onofre 2	"	1,020,000
12. San Onofre 3	"	1,020,000
13. St. Lucie 1	"	1,030,000
14. St. Lucie 2	"	1,030,000
15. Waterford 3	"	1,030,000

Babcock & Wilcox Reactors

1. Arkansas 1	PWR-Large Dry Containment	1,088,000
2. Crystal River 3	"	1,088,000
3. Davis Besse 1	"	1,088,000
4. Oconee 1	"	1,088,000
5. Oconee 2	"	1,088,000
6. Oconee 3	"	1,088,000
7. Rancho Seco 1	"	1,078,000
8. Three Mile Island 1	"	1,088,000

General Electric Plants

1. Browns Ferry 1	Mark I	1,047,000
2. Browns Ferry 2	"	1,047,000
3. Browns Ferry 3	"	1,047,000
4. Brunswick 1	"	1,047,000
5. Brunswick 2	"	1,047,000
6. Clinton 1	Mark III	1,080,000
7. Cooper	Mark I	1,047,000
8. Dresden 2	"	1,047,000
9. Dresden 3	"	1,047,000
10. Duane Arnold	"	1,047,000
11. Fermi 2	"	1,047,000
12. Fitzpatrick	"	1,047,000
13. Grand Gulf 1	Mark III	1,080,000
14. Hatch 1	Mark I	1,047,000
15. Hatch 2	"	1,047,000
16. Hope Creek 1	"	1,047,000
17. LaSalle 1	Mark II	1,061,000

<u>General Electric Plants</u>	<u>Containment Type</u>	<u>Annual Fee</u>
18. LaSalle 2	Mark II	\$1,061,000
19. Limerick 1	"	1,061,000
20. Limerick 2	"	1,061,000
21. Millstone 1	Mark I	1,047,000
22. Monticello	"	1,047,000
23. Nine Mile Point 1	"	1,047,000
24. Nine Mile Point 2	Mark II	1,061,000
25. Oyster Creek	Mark I	1,047,000
26. Peach Bottom 2	"	1,047,000
27. Peach Bottom 3	"	1,047,000
28. Perry 1	Mark III	1,080,000
29. Pilgrim 1	Mark I	1,047,000
30. Quad Cities 1	"	1,047,000
31. Quad Cities 2	"	1,047,000
32. River Bend 1	Mark III	1,080,000
33. Shoreham	Mark II	1,061,000
34. Susquehanna 1	"	1,061,000
35. Susquehanna 2	"	1,061,000
36. Vermont Yankee	Mark I	1,047,000
37. Washington Nuclear 2	Mark II	1,051,000

Other Reactors ^{1/}

Three Mile Island 2	B&W-PWR-Dry Containment	\$1,088,000
Big Rock Point	GE-Dry Containment	\$1,022,000
Yankee Rowe	Westinghouse-PWR-Dry Containment	\$1,021,000
Ft. St. Vrain	High Temperature Gas Cooled	\$ 820,000

^{1/} These licensed reactors have not been included in the fee base since historically they have been granted either full or partial exemptions from the annual fees. The fees shown for these reactors are those fees for the particular type of reactor. No adjustments have been made based on size or particular circumstance of the reactor.

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COVER SHEET FOR CORRESPONDENCE

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ESTIMATED COLLECTIONS
FY 1990
\$ In Millions

PART 171 Fees	\$115
PART 170 Fees	57
DOE Waste Fund	<u>23</u>
Total Estimated Collections FY 1990	\$195 million

COVER SHEET FOR CORRESPONDENCE

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FY 1990 Budget By Major Category
(\$ In Millions)

Salaries and Benefits	\$203.16
Administrative Support	74.64
Travel	12.27

Total Nonprogram Support Obligations	\$290.07
 Program Support	 148.70

Total Budget	\$438.77

The Direct FTE Productive Hourly Rate of \$92 (\$92.51/hr rounded down) is calculated by dividing the annual nonprogram support costs (\$290.07 million) less the amount applicable to exempted functions (\$26.10 million) by the product of the direct FTE (1,636 FTE) and the number of productive hours in one year (1,744 hours) as indicated in OMB Circular A-76, "Performance of Commercial Activities."

<u>HOURLY RATE</u>	<u>ANNUAL FTE</u>	
\$290.07	1,744	hours in a productive year
<u>-26.10</u>	<u>x \$92</u>	per hour
 \$263.97 = \$161.35	 \$160,448	 per year or
<u>1636</u>	<u>\$160,000</u>	 rounded
 \$161.35 = \$ 92.51		
<u>1744</u>		

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Allocation of Direct FTE's by Office

Office	Number of Direct FTE's ^{1/}
NRR	1,007.5
RESEARCH	146.0
NMSS	317.3
AEOD	85.0
ASLAP/ASLBP	22.2
ACRS	25.0
OGC	33.0
Total Direct FTE	1,636.0

^{1/} Regional employees are counted in the office of the program each supports.

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