

PDR



ARKANSAS POWER & LIGHT COMPANY
POST OFFICE BOX 551 LITTLE ROCK, ARKANSAS 72203 (501) 371-4000

March 11, 1983

Mr. James R. Tourtellotte, Chairman
Regulatory Reform Task Force
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Tourtellotte:

As committed by Mr. Jerry L. Maulden in his letter to you dated February 24, 1983, attached is the requested information on costs associated with backfitting at our nuclear units.

Very truly yours,

John R. Marshall
Manager, Licensing

JRM:JTE:gw
Attachment

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ARKANSAS NUCLEAR ONE

COSTS FOR NRC TMI LESSONS LEARNED BACKFITTING
(\$ x 1,000)

<u>W.O. #</u>	<u>Description</u>	<u>Cost-to-Date*</u>
80000	Emergency Response Facility	\$7,328.5
80051	Site Development & Utilities for Emergency Response Facility	594.8
80052	Building Furnishings & Equipment for Emergency Response Facility	1,079.2
80565	ANO Emergency Communication Upgrade	682.2
80539	Install Early Warning System	863.3
70006	High Range Gaseous Effluent Radiation Monitoring - Unit 1	2,634.4
70041	Conversion of Power Pump Supply - Unit 1	97.8
70064	Reactor Incore Thermocouple Monitoring - Unit 1	65.0
70065	Diverse Containment Isolation - Unit 1	32.3
70066	Install Equipment for Anticipatory Reactor Trip on Loss of Feedwater or Turbine Trip - Unit 1	358.4
70074	Emergency Feedwater Initiation & Control - Unit 1	3,738.9
70089	Sewer Treatment Plant Expansion for Emergency Response Facility - Unit 1	327.0
70090	Emergency Power Supply - Unit 1	33.5
70091	Direct Indication of Valve Position - Unit 1	135.6
70092	Instrumentation for Detection of Inadequate Core Cooling - Unit 1	600.8
70094	Material Engineering Installation for Post Accident Sampling - Unit 1	5,549.0
70095	Safety Grade EFW Flow Indication - Unit 1	85.4

<u>W.O. #</u>	<u>Description</u>	<u>Cost-to-Date*</u>
70097	High Range Containment Radiation Monitors - Unit 1	473.5
70098	Instrumentation to Monitor Containment Conditions During the Course of an Accident - Unit 1	187.9
70099	Reactor Coolant Vent System - Unit 1	1,184.4
80011	Environmental Qualification of Safety Related Electrical Equipment - Unit 1	514.7
80030	Critical Functions & Parameters - Unit 1	1,390.3
80057	Shift Supervisor's Office - Unit 1	203.0
70100	Emergency Power Supply - Unit 2	4.3
70101	Direct Indication of Valve Position - Unit 2	62.1
70102	TSAT Monitors	108.6
70103	Materials Engineering & Installation to Improve Post Accident Sampling - Unit 2	4,769.0
70105	High Range Gaseous Effluent Radiation Monitor - Unit 2	2,358.4
70107	Reactor Coolant Vent System - Unit 2	1,058.4
70110	Transient & Accident Analysis - Unit 2	350.9
70122	Instrumentation to Monitor Containment Conditions During the Course of an Accident - Unit 2	338.1
80020	Verification & Qualification of Safety Related Electrical Equipment - Unit 2	1,078.5
80031	Critical Functions & Parameters - Unit 2	1,349.0
80056	Shift Supervisor's Office - Unit 2	<u>19.9</u>
	TOTAL	<u>\$39,657.1</u>

ARKANSAS NUCLEAR ONE

COSTS FOR NRC IMPOSED BACKFITTINGS
(\$ x 1,000)

<u>W.O. #</u>	<u>Description</u>	<u>Cost-to-Date*</u>
40008	10 CFR 50 Appendix "R" Compliance	\$ 878.4
40040	Replacement of Auxiliary Building Vent Header - Unit 1	438.2
40041	Replacement of Gas Collection Header - Unit 1	434.3
40084	Health Physics Modifications - Unit 1	499.5
40085	Health Physics Modifications - Unit 2	947.7
40090	Purchase Radiation Survey Equipment	67.4
40091	Shielding Around Room 2035 - Unit 2	3.0
40102	Thermal Aging Analysis	467.4
40106	8-hour Emergency Lighting Installation - Unit 1	165.8
40107	8-hour Emergency Lighting Installation - Unit 2	121.4
40110	Purchase Security Camera	3.7
40118	Implementation of Plant Engineering Drawing Control Program	422.6
40136	Hydrogen Purge System Evaluation - Unit 1	48.9
40137	Fire System Smoke Alarm Addition - Unit 2	26.9
40159	Class 1E Cable Termination Inside Containment - Unit 1	43.2
40517	FSAR - Update Computer	51.7
50006	Install Additional Security & Related Facilities	10,766.4
50011	EFW Turbine Replacement - Unit 1	145.8
50036	Resin Transfer Station	16.7
50056	Service Water Strainer Addition - Unit 2	50.0

<u>W.O. #</u>	<u>Description</u>	<u>Cost-to-Date*</u>
50061	Pressurizer Safety Relief Valve Discharge Piping Support Mods - Unit 1	144.6
50068	Modification of CS Pipe to RE 483 with S.S.	5.9
50071	Startup Range Neutron Detectors - Unit 2	612.1
50084	Waste Gas Monitoring System - Unit 2	4.2
50085	Waste Gas Monitoring System - Unit 1	5.7
50193	Breathing Air System - Unit 2	225.7
50223	Provide Capability for Installation of an external H ₂ Recombiner - Unit 1	14.8
50234	Decay Heat System Isolation Valve Verification	11.9
50239	Modifications at TSC	.6
50240	Enlargement of Technical Support Center	14.6
50275	Emergency Diesel Generator Lube Oil System Modifications	8.2
70127	Deluge Sprinkler System - Unit 2	60.3
80001	Breathing Air System - Unit 1	189.0
40096	NPC Emergency Notification System - Unit 1	34.7
40098	NRC Emergency Notification System - Unit 2	38.4
60081	Fire Protection Modifications - Unit 1	1,641.1
80034	Additional Instrumentation AC Power - Unit 2	12.1
80049	Caustic Batch Tank - both Units	26.4
80074	Replace 18 EPG Valves with Target Rock Valves - Unit 2	<u>522.3</u>
	TOTAL	<u>\$19,171.6</u>

ARKANSAS NUCLEAR ONE
 PROJECTED ADDITIONAL COSTS FOR NRC IMPOSED
 BACKFITTING REQUIREMENTS
 (\$ X 1,000)

(1) Pressurizer Safety Relief Valve Discharge Piping Analysis & Modification - Unit 1 & 2	\$ 2,000.0
(2) Appendix R - Fire Protection Modifications	4,000.0
(3) Environmental Qualification of Safety Related Electrical Equipment	1,250.0
(4) Instrumentation to Detect Inadequate Core Cooling - Units 1 & 2	12,000.0
(5) Upgrade Waste Gas Monitoring System - Unit 2	405.7
(6) Install Capability for H ₂ Recombiners - Unit 1	700.0
(7) Human Factors Review & Modifications - Units 1 & 2	2,000.0
(8) Modifications to Comply with Reg. Guide 1.97 (Post TMI Mods) - Units 1 & 2	9,000.0
(9) EFW Turbine Replacement - Unit 1	1,652.9
(10) Installation of Breathing Air System - both Units	1,702.0
(11) Critical Functions & Parameters - both Units	2,959.1
(12) Emergency Feedwater Initiation & Control - Unit 1	9,580.3
(13) Install Additional Security & Related Facilities	450.0
(14) Service Water Strainer Addition	183.2
(15) Health Physics Area Mods - both Units	835.4
(16) Reactor Coolant Vent System - both Units	959.3
(17) Class 1E Cable Terminations Inside Containment - Unit 1	707.3
(18) Startup Range Neutron Detectors	385.1
(19) Replace 18 EPG Valves with Target Rock Valves - Unit 2	599.7
(20) High Range Gaseous Effluent Radiation Monitoring - Units 1 & 2	3,256.1

(21) Thermal Aging Analysis	942.5
(22) Replacement of Auxiliary Building Vent Header - Unit 1	591.3
(23) Replacement of Gas Collection Header - Unit 1	579.9
(24) Emergency Diesel Generator Lube Oil System Mods.	230.2
(25) Deluge Sprinkler System - Unit 2	197.3
(26) Hydrogen Purge System Evaluation - Unit 1	151.6
(27) Decay Heat System Isolation Valve Verification	117.1
(28) Modifications at Tech Support Center	118.6
(29) Resin Transfer Station	<u>359.9</u>
TOTAL	<u>\$57,914.5</u>

ARKANSAS NUCLEAR ONE
 MAJOR UTILITY INITIATED BACKFITS
 (\$ X 1,000)

<u>WO #</u>	<u>Description</u>	<u>Cost To Date*</u>
40074	Simulator Acquisition -Unit 1	\$3,633.9
40130	Repair & Refurbish Turbine Rotor - Unit 2	4,450.5
40134	ANO Simulator Building	370.1
50041	Simulator Acquisition - Unit 2	3,098.9
50060	Reactor Coolant Pump Seal Controlled Bleedoff By-pass	259.5
50131	Shutdown Cooling Heat Exchanger Tube Bundle - Unit 2	274.0
50156	Service Water Chemical Cleaning - Unit 2	328.2
50162	Thermal Shield Bolt Addition - Unit 1	95.7
50225	Upgrade Seismic Instrumentation - Unit 1	64.3
70008	Spent Fuel Rack Replacement - Unit 2	320.6
80041	Moisture Separator Reheater Drains - Unit 1	227.2
80046	Spent Fuel Pool Rerack - Unit 1	174.8
50008	Service Water Butterfly Valve Replacement - Unit 2	888.3
50088	Steam Generator Blowdown Modification-Unit 2	168.7
50194	Remove & Install Pressurizer Electric Heaters	342.5
80033	In-Core Instrument Cutter-Unit 2	444.0
80076	Service Water System Modifications-Unit 1	1,076.3
80077	Service Water System Modifications-Unit 2	2,805.4
50035	ANO Discharge Canal Improvements	114.6
50094	Chemical Clean Steam Generators Phase-1, Unit 1	924.8
50096	Chemical Clean Steam Generator Phase-2, Unit 1	1,003.1

<u>WO #</u>	<u>Description</u>	<u>Cost To Date*</u>
50097	Chemical Clean Steam Generator Phase-2, Unit 2	95.2
80047	CEA Exchange Tool, Unit 2	<u>77.7</u>
	TOTAL	<u>\$21,238.3</u>

<u>ER/w.</u>	<u>Title</u>	<u>Expen.</u> <u>Thru</u> <u>12/82</u>	<u>Future</u> <u>Expen.</u>	<u>Total</u> <u>Capital</u> <u>Expen.</u>
<u>UNIT 1 (Continued)</u>				
737.01	Purchase Low Level Radwaste Storage Building	272	-	272
653.44	Purchase HEPA Filtration Units	49	-	49
587.01	Expand Spent Fuel Pool System	26	-	26
593.01	Pur. a CEPO Compactor With Accessories for Radwaste	13	-	13
499.05	Purchase Portable Radios for Security System	17	-	17
378.41	Purchase Nekton Return Floating Basket	85	-	85
428.01	Spent Fuel Storage Expan. Proj. Engineering	2,030	-	2,030
005.00042	Combination Gas & Oxygen Indicating Meter	4	-	4
	TOTAL	<u>42,781</u>	<u>44,142</u>	<u>86,923</u>

LB/gcd
3/17/83
BSEP-Cost 1/212J

BRUNSWICK ORIGINAL COST DATA
NRC TMI BACKFITTING
(\$000'S)

Attachment C2

<u>ER/WA</u>	<u>Title</u>	<u>Expen. Thru 12/82</u>	<u>Future Expen.</u>	<u>Total Capital Expen.</u>
<u>UNIT 1</u>				
652.44	Auto Switch of RCIC TMI	101	74	175
652.60	TMI Data System	-	5,308	5,308
652.62	Implementation of Reg. Guide 1.97 - Rev. 2	-	1,172	1,172
729.09	Increased Range Rad. Mod. - BSEP 1 - TMI	932	657	1,639
729.11	Post Accident Sampling - BSEP 1 - TMI	1,504	818	2,322
729.13	Imp. In-Plt. Iodine Inst. - BSEP 1 - TMI	40	-	40
729.15	Containment Isolation Prov. - BSEP 1 - TMI	223	373	596
729.17	Safety Relief Valve Monitoring - TMI	384	252	636
729.19	Primary Containment Level Ind. - TMI	534	353	887
729.24	H ₂ Control Penetration - TMI	474	1,357	1,831
729.31	Containment Hydrogen Monitoring - TMI	995	559	1,554
729.33	Alerting System - TMI	427	-	427
729.34	Emergency Plan Equipment - BSEP	71	-	71
729.21	Install Primary Containment Pressure Indication	95	-	95
	TOTAL	5,830	10,923	16,753

LB/gcd
3/17/83
BSEP-Cost1/212J