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May 6, 1997

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FPSC-RECORDS/REPORTING  
By Hand Delivery

Blanca S. Bayó, Director  
Records and Reporting  
Florida Public Service Commission  
4075 Esplanade Way, Room 110  
Tallahassee, Florida 32399-0850

970540-EG

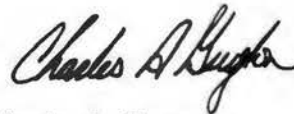
**Re: Duct System Testing and Repair Program**

Dear Ms Bayó:

Enclosed for filing on behalf of Florida Power & Light Company are the original and fifteen (15) copies of Petition For Modification of Florida Power & Light Company's Duct System Testing and Repair Program.

If you or your Staff have any questions regarding this filing, please contact me

Very truly yours,



Charles A. Guyton

CAG/ld  
encs.  
TAI/19757-1

Miami  
305 444-0000  
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DOCUMENT NUMBER-DATE  
04479 MAY-65  
582 911 4100 Fax  
FPSC-RECORDS/REPORTING

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**In Re: Petition for Modification of  
Florida Power & Light Company's  
Duct System Testing and Repair  
Program** ) **Docket No.**  
)  
) **Filed: May 6, 1997**  
)

**PETITION FOR MODIFICATION OF FLORIDA POWER & LIGHT  
COMPANY'S DUCT SYSTEM TESTING AND REPAIR PROGRAM**

Florida Power & Light Company ("FPL"), pursuant to Section 366 82(2), Florida Statutes (1995), hereby petitions the Florida Public Service Commission ("Commission") to (1) approve the modifications to FPL's Duct System and Repair Program set forth in this petition and attachments, (2) allow FPL to recover reasonable and prudent expenditures for the modified Duct System Testing and Repair Program, and (3) include FPL's modified Duct System Testing and Repair Program as part of FPL's approved DSM Plan. The grounds for this petition are

1. FPL's address is 9250 West Flagler Street, Miami Florida, 33174. Correspondence, notices, orders and other documents concerning this petition should be sent to:

**Matthew M. Childs, P.A.**  
**Charles A. Guyton**  
**Steel Hector & Davis LLP**  
**Suite 601, 215 S. Monroe St.**  
**Tallahassee, Florida 32301**

**William G. Walker**  
**Vice President, Regulatory Affairs**  
**Florida Power & Light Company**  
**9250 West Flagler Street**  
**Miami, Florida 33174**

2. FPL is an investor-owned electric utility regulated by the Commission pursuant to Chapter 366, Florida Statutes. FPL is subject to the Florida Energy Efficiency Conservation Act ("FEECA"), Section 366.80-85, 413.519, Florida Statutes (1995), and its Energy Conservation Cost Recovery ("ECCR") clause is subject to the Commission's jurisdiction. FPL has

**DOCUMENT NUMBER-DATE**  
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**FPSC-RECORDS/REPORTING**

Commission approved conservation goals. See, Order No. PSC-94-1313-FOF-EG issued on October 25, 1994. The Commission has previously approved a FPL DSM Plan to meet the goals approved for FPL. See, Order Nos. 95-1343-S-EG, 95-1343A-S-EG. As part of that DSM Plan the Commission approved FPL's Duct System Testing and Repair Program. FPL has a substantial interest in whether this program is modified as requested by FPL in this petition, approved as part of FPL's DSM Plan, and authorized for cost recovery.

3. The objective of the Duct System Testing and Repair Program is to encourage demand and energy conservation through air leak identification in air conditioning duct systems and repair of those leaks by qualified contractors. Under this program FPL performs on-site tests at the customer's premise, identifies leak sites and provides incentives to customers for leak repairs. The Duct System Testing and Repair Program, as FPL proposes to modify it, is more fully described in Appendix A attached to this petition.

4. The Duct System Testing and Repair Program, as modified, will help advance the policy objectives set forth in Rule 25-17.001, Florida Administrative Code and the FEECA. As shown in Appendix A, the Duct System Testing and Repair Program will reduce an average participant's summer and winter peak demand and energy consumption by .278 kW Summer demand, .306 kW Winter demand, and 467 annual kWh, respectively.

5. The Duct System Testing and Repair Program, as modified, is projected to be cost-effective. Appendix B, attached hereto, shows the results of the cost-effectiveness analyses of the program using the Commission's methodology prescribed in Rule 25-17.008, Florida

Administrative Code and supply option cost and performance assumptions from FPL's most recent resource planning study. FPL seeks to modify the Duct System Testing and Repair Program to make it cost-effective under current planning assumptions. To make the Duct System Testing and Repair Program cost-effective, FPL has (a) restructured the incentives to be paid from an average incentive not to exceed \$629 per kW of summer demand reduction to an average incentive not to exceed \$369 per kW of summer demand reduction and (b) excluded from the program duct testing and repair for non-demand commercial and industrial customers. Each of these modifications has the effect of helping the Duct System Testing and Repair Program to achieve a benefit/cost ratio greater than 1.0 under the RIM and Participants tests.

6. The Duct System Testing and Repair Program, as modified, is directly monitorable and will yield measurable results. FPL's monitoring plan is described in Section VI of Appendix A. This is the same monitoring plan which FPL has been following in the existing program, and it has yielded measurable results.

7. FPL is not aware of any disputed issues of material fact.

8. FPL respectfully requests that this petition be processed with the Commission's Proposed Agency Action procedure, which is recognized in Section 120.80(13)(b), Florida Statutes.

WHEREFORE, FPL respectfully petitions the Commission to (1) approve the Duct System Testing and Repair Program, as modified, (2) allow FPL to recover reasonable and

prudent expenditures for the Duct System Testing and Repair Program, as modified, through FPL's ECCR clause, and (3) approve the Duct System Testing and Repair Program, as modified, as part of FPL's approved DSM Plan.

Respectfully submitted,

STEEL HECTOR & DAVIS LLP  
Suite 601, 215 S. Monroe Street  
Tallahassee, Florida 32301-1804

Attorneys for Florida Power  
& Light Company

By:   
Charles A. Guyton

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

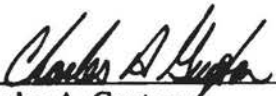
**In Re: Petition for Modification of ) Docket No.**  
**Florida Power & Light Company's )**  
**Duct System Testing and Repair ) Filed: May 6, 1997**  
**Program )**

**CERTIFICATE OF SERVICE**

I hereby certify that on this the 6th day of May, 1997, a copy of the foregoing Petition for Modification of Florida Power & Light Company's Duct System Testing and Repair Program was served by hand delivery\* or First Class United States Mail on the following:

Robert V. Elias, Esquire\*  
Chief of Electric & Gas  
Division of Legal Services  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

Jack Shreve, Esquire  
Public Counsel  
Office of Public Counsel  
Room 812  
111 West Madison Street  
Tallahassee, Florida 32399-1400

By   
Charles A. Guyton

## **APPENDIX A**

### **DUCT SYSTEM TESTING AND REPAIR PROGRAM**

#### **I. Program Description**

The objective of FPL's Duct System Testing and Repair Program is to encourage demand and energy conservation through air leak identification in air conditioning duct systems and repair of those leaks by qualified contractors. This objective is accomplished by performing on-site tests at the customer's premise, identifying leak sites, and providing incentives to customers for leak repairs

FPL plans to make residential customers aware of this program through contractors and other trade allies, appropriate advertising and promotion activities, as well as direct contact with potential participants by FPL personnel. FPL will facilitate the application of this program to potential low income participants. This will be accomplished by targeting public agencies and governmental housing authorities for program education and implementation. For example, the qualification of a public agency or housing authority to perform duct system repairs as a participating contractor will assist in lowering the installation costs of measures for low income participants. FPL also will assist agencies in the selection of qualified contractors for the installation of the qualified measure if requested to do so.

## **II. Summary of Program Changes**

FPL's existing Duct System Testing and Repair Program is available to both residential and small, non-demand commercial and industrial customers. Based on an analysis of this technology for the two customer classes, the following changes are being made to the program in order to maintain cost-effectiveness:

- 1) a restructuring of the program incentives from the current average of not to exceed \$629 per summer kw of demand reduction to an average incentive not to exceed \$369 per summer kw of demand reduction, and
- 2) exclusion of small, non-demand commercial and industrial customers.

## **III. Description of Program Administration**

The Duct System Testing and Repair Program is available to all residential customers. To be eligible for incentives, the customer must make a repair at a residence which has had a Certificate of Occupancy or equivalent for at least one year, and these dwellings must have an electric air conditioning duct system.

Duct tests are performed by diagnosticians using diagnostic and measurement tools designed to assist in locating air leakage in air conditioning duct systems. There is a charge for this test, and FPL proposes to continue to pay a portion of the customer cost of the test. If leaks are identified during the test, the diagnostician will provide the customer with a diagram of the leak sites and a list of FPL participating independent contractors. Repair incentives, Watt-Saver certificate(s), are also given to customers by the diagnostician at the time the test is performed. When the repair of the duct system



is completed, the customer signs and gives the Watt-Saver Certificate to the contractor as partial payment for the installation. The contractor then completes the Watt-Saver certificate and forwards it to FPL. FPL will perform post installation inspections on a random basis for a sample of participants prior to payment of incentives.

Duct system testing will be performed by FPL or its designee. To qualify for conservation incentives, duct system repairs must be performed by approved and current FPL Repair Contractors. As part of the Duct System Repair Contractor's responsibilities, each contractor must complete an FPL specified training course in testing and repair techniques.

Repair incentives will be based on the amount of time required to repair the leak sites identified and will be included in the Program Standards. Incentives will not exceed a program average of \$369 per summer kw demand reduction, which is based on cost-effectiveness analyses included in Appendix B. All incentive requests will be tracked by a computer system, which will record a history of incentive payments made to customers.

FPL will file Program Standards for this program. The Program Standards will be subject to periodic review and may change over time based on factors such as, but not limited to, technological advances, program results, operational needs, application assumptions and incentive amounts.

#### **IV. Projected Participation and Savings**

The projected demand and energy savings for a typical installation are .278 kw (summer) and 306 kw (winter), 467 annual kwh. The energy consumption and demand reduction projections are based on evaluation results.

#### **V. Cost-Effectiveness Analysis**

FPL has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost-effectiveness of this program. These cost-effectiveness analyses can be found in Appendix B. These analyses show the following benefit-cost ratios for the Duct System Testing and Repair Program: 2.42 Participants, 1.02 RIM, 1.51 TRC.

#### **VI. Program Monitoring and Evaluation**

The impact of this program on demand and energy consumption will be evaluated over time by FPL. Baseline data will be developed from non-participants, and participants' data will be compared against non-participants' data to establish usage patterns and demand impacts and to validate engineering assumptions.

FPL will utilize any or all three major impact evaluation analysis methods in a manner that most cost-effectively meets the overall impact evaluation objectives -- engineering analysis, statistical billing analysis, and on-site metering research. As these evaluations proceed, the components to be analyzed and the periods for which data is available will increase, resulting in continual enhancements in the scope and accuracy of reported evaluation results.

**Appendix B**

**Cost-effectiveness Run**

INPUT DATA - PART 1 CONTINUED  
PROGRAM METHOD SELECTED REV\_REQ  
PROGRAM NAME Residential Duct System Testing & Repair

I PROGRAM DEMAND SAVINGS & LINE LOSSES

(1) CUSTOMER kW REDUCTION AT METER .....	0.28 kW
(2) GENERATOR kW REDUCTION PER CUSTOMER .....	0.38 kW
(3) kW LINE LOSS PERCENTAGE .....	8.32 %
(4) GENERATOR kWh REDUCTION PER CUSTOMER .....	500.5 kWh
(5) kWh LINE LOSS PERCENTAGE .....	8.75 %
(6) GROUP LINE LOSS MULTIPLIER .....	1.0000
(7) CUSTOMER kWh INCREASE AT METER .....	0.0 kWh

II ECONOMIC LIFE & K FACTORS

(1) STUDY PERIOD FOR THE CONSERVATION PROGRAM .....	25 YEARS
(2) GENERATOR ECONOMIC LIFE .....	30 YEARS
(3) T&D ECONOMIC LIFE .....	35 YEARS
(4) K FACTOR FOR GENERATION .....	1.61229
(5) K FACTOR FOR T & D .....	1.44767

III UTILITY & CUSTOMER COSTS

(1) UTILITY NON RECURRING COST PER CUSTOMER .....	-- \$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER .....	-- \$/CUST
(3) UTILITY COST ESCALATION RATE .....	-- %
(4) CUSTOMER EQUIPMENT COST .....	-- \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE .....	-- %
(6) CUSTOMER O & M COST .....	-- \$/CUST/YR
(7) CUSTOMER O & M COST ESCALATION RATE .....	-- %
(8) INCREASED SUPPLY COSTS .....	-- \$/CUST/YR
(9) SUPPLY COSTS ESCALATION RATES .....	-- %
(10) UTILITY DISCOUNT RATE .....	8.22 %
(11) UTILITY ADJDC RATE .....	10.70 %
(12) UTILITY NON RECURRING REBATE/INCENTIVE .....	-- \$/CUST
(13) UTILITY RECURRING REBATE/INCENTIVE .....	-- \$/CUST
(14) UTILITY REBATE/INCENTIVE ESCALATION RATE .....	-- %

IV AVOIDED GENERATOR AND T&D COSTS

(1) BASE YEAR .....	1986
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT .....	2001
(3) IN-SERVICE YEAR FOR AVOIDED T&D .....	1989-2001
(4) BASE YEAR AVOIDED GENERATING COST .....	285 \$/kW
(5) BASE YEAR AVOIDED TRANSMISSION COST .....	70 \$/kW
(6) BASE YEAR DISTRIBUTION COST .....	50 \$/kW
(7) GEN, TRAN & DIST COST ESCALATION RATE .....	2.56 %
(8) GENERATOR FIXED O & M COST .....	8 \$/kW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE .....	3.34 %
(10) TRANSMISSION FIXED O & M COST .....	2.73 \$/kW
(11) DISTRIBUTION FIXED O & M COST .....	13.01 \$/kW
(12) T&D FIXED O&M ESCALATION RATE .....	3.34 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS .....	0.030 CENTS/kWh
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE .....	2.47 %
(15) GENERATOR CAPACITY FACTOR .....	30% (In-service year)
(16) AVOIDED GENERATING UNIT FUEL COST .....	1.68 CENTS PER kWh (In-service year)
(17) AVOIDED GEN UNIT FUEL COST ESCALATION RATE .....	5.03 %

V NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON FUEL COST IN CUSTOMER BILL .....	-- CENTS/kWh
(2) NON-FUEL COST ESCALATION RATE .....	-- %
(3) DEMAND CHARGE IN CUSTOMER BILL .....	-- \$/kWHD
(4) DEMAND CHARGE ESCALATION RATE .....	-- %

\* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK  
-- VALUE SHOWN IS FOR FIRST YEAR ONLY (VALUE VARIES OVER TIME)  
--- PROGRAM COST CALCULATION VALUES ARE SHOWN ON PAGE 2

"INPL" DATA PART 1 CONTINUED  
 PROGRAM METHOD SELECTED REV\_REQ  
 PROGRAM NAME Residential Duct System Testing & Repair

YEAR	(1) UTILITY PROGRAM COSTS WITHOUT INCENTIVES \$(000)	(2) UTILITY INCENTIVES \$(000)	(3) OTHER UTILITY COSTS \$(000)	(4) TOTAL UTILITY PROGRAM COSTS \$(000)	(5) ENERGY CHARGE REVENUE LOSSES \$(000)	(6) DEMAND CHARGE REVENUE LOSSES \$(000)	(7) PARTICIPANT EQUIPMENT COSTS \$(000)	(8) PARTICIPANT O&M COSTS \$(000)	(9) OTHER PARTICIPANT COSTS \$(000)	(10) TOTAL PARTICIPANT COSTS \$(000)
1996	0	0	0	0	0	0	0	0	0	
1997	0	0	0	0	0	0	0	0	0	
1998	2,845	3,582	0	6,407	591	0	9,957	0	9,957	
1999	2,424	2,988	0	5,382	1,713	0	6,485	0	6,485	
2000	1,983	2,374	0	4,357	2,590	0	6,940	0	6,940	
2001	0	0	0	0	2,983	0	0	0	0	
2002	0	0	0	0	2,988	0	0	0	0	
2003	0	0	0	0	3,014	0	0	0	0	
2004	0	0	0	0	3,061	0	0	0	0	
2005	0	0	0	0	3,057	0	0	0	0	
2006	0	0	0	0	3,149	0	0	0	0	
2007	0	0	0	0	3,205	0	0	0	0	
2008	0	0	0	0	3,289	0	0	0	0	
2008	0	0	0	0	3,370	0	0	0	0	
2010	0	0	0	0	3,643	0	0	0	0	
2011	0	0	0	0	3,682	0	0	0	0	
2012	0	0	0	0	3,759	0	0	0	0	
2013	0	0	0	0	3,808	0	0	0	0	
2014	0	0	0	0	3,836	0	0	0	0	
2015	0	0	0	0	3,932	0	0	0	0	
2016	0	0	0	0	3,988	0	0	0	0	
2017	0	0	0	0	4,088	0	0	0	0	
2018	0	0	0	0	4,128	0	0	0	0	
2019	0	0	0	0	4,188	0	0	0	0	
2020	0	0	0	0	4,272	0	0	0	0	

NPV	7,282	8,904	0	16,186	78,407	0	28,382	0	28,382
NPV	8,889	8,982	0	12,670	24,675	0	19,734	0	19,734

\* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK  
 \*\* NEGATIVE COSTS WILL BE CALCULATED AS POSITIVE BENEFITS FOR TRC AND RMI TESTS

CALCULATION OF GEN K-FACTOR  
PROGRAM METHOD SELECTED REV\_REQ  
PROGRAM NAME Residential Duct System Testing & Repair

(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
MID-YEAR RATE BASE \$'(000)	DEBT \$'(000)	PREFERRED STOCK \$'(000)	COMMON EQUITY \$'(000)	INCOME TAXES \$'(000)	OTHER TAXES & INSURANCE \$'(000)	DEPREC \$'(000)	DEFERRED TAXES \$'(000)	TOTAL FIXED CHARGES \$'(000)	PRESENT WORTH FIXED CHARGES \$'(000)	CUMULATIVE PW FIXED CHARGES \$'(000)	
2001	10,888	408	0	735	482	150	357	22	2,125	2,125	2,125
2002	10,238	382	0	704	282	150	357	183	2,057	1,884	4,009
2003	9,728	372	0	688	282	150	357	141	1,981	1,881	5,889
2004	9,248	353	0	635	291	150	357	121	1,908	1,484	7,133
2005	8,771	338	0	603	288	150	357	102	1,837	1,291	8,424
2006	8,321	318	0	572	287	150	357	84	1,770	1,138	9,583
2007	7,887	302	0	542	285	150	357	68	1,704	1,004	10,688
2008	7,468	285	0	513	282	150	357	53	1,642	885	11,482
2009	7,068	270	0	485	285	150	357	51	1,580	780	12,232
2010	6,681	254	0	457	248	150	357	51	1,519	688	12,918
2011	6,342	238	0	428	231	150	357	51	1,457	603	13,521
2012	6,034	223	0	401	213	150	357	51	1,388	528	14,080
2013	5,748	208	0	373	198	150	357	51	1,335	483	14,613
2014	5,487	192	0	345	178	150	357	51	1,273	404	14,918
2015	4,808	178	0	317	180	150	357	51	1,212	352	15,270
2016	4,280	161	0	288	143	150	357	51	1,151	308	15,678
2017	3,782	145	0	261	125	150	357	51	1,080	268	16,042
2018	3,384	128	0	233	108	150	357	51	1,028	228	16,371
2019	2,975	114	0	205	90	150	357	51	987	188	16,288
2020	2,587	98	0	178	72	150	357	51	908	148	16,438
2021	2,204	84	0	152	147	150	357	(40)	851	148	16,584
2022	1,831	74	0	133	228	150	357	(130)	810	127	16,711
2023	1,704	65	0	117	218	150	357	(130)	778	111	16,822
2024	1,477	58	0	102	208	150	357	(130)	742	87	16,820
2025	1,250	48	0	88	187	150	357	(130)	708	66	17,005
2026	1,022	38	0	70	187	150	357	(130)	674	74	17,078
2027	795	30	0	55	177	150	357	(130)	638	64	17,144
2028	588	22	0	38	167	150	357	(130)	605	56	17,200
2029	341	13	0	23	157	150	357	(130)	571	48	17,248
2030	113	4	0	8	148	150	357	(130)	537	42	17,288

IN SERVICE COST (8000) 10,724  
 IN SERVICE YEAR 2001  
 BOOK LIFE (YRS) 30  
 EFFEC TAX RATE 38.575  
 DISCOUNT RATE 9.22%  
 OTAX & INS RATE 1.40%

CAPITAL STRUCTURE

SOURCE	WEIGHT	COST
DEBT	45%	8.50%
P/S	0%	0.00%
C/S	55%	12.50%

K-FACTOR = CPWFC / IN-SVC COST =

1.61229

DEFERRED TAX AND MID-YEAR RATE BASE CALCULATION  
 PROGRAM METHOD SELECTED REV\_REL  
 PROGRAM NAME Residues Duct System Testing & F

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
YEAR	TAX DEPRECIATION SCHEDULE	TAX DEPRECIATION \$(000)	ACCUMULATED TAX DEPRECIATION \$(000)	BOOK DEPRECIATION \$(000)	ACCUMULATED BOOK DEPRECIATION \$(000)	BOOK DEPRECIATION FOR DEFERRED TAX \$(000)	ACCUMULATED BOOK DEPR FOR DEFERRED TAX \$(000)	DEFERRED TAX DUE TO DEPRECIATION \$(000)	TOTAL EQUITY AFUDC \$(000)	BOOK DEPR RATE MINUS 1A LIFE	(10)/(11) TAX RATE \$(000)	SALVAGE TAX RATE \$(000)	ANNUAL DEFERRED TAX (9)-(12)+(13) \$(000)	ACCUMULATED DEFERRED TAX \$(000)
2001	3.75%	385	385	357	357	338	338	22	585	0	0	0	22	(132)
2002	7.22%	780	1,155	357	715	338	675	163	585	0	0	0	163	31
2003	6.68%	703	1,858	357	1,072	338	1,013	141	585	0	0	0	141	172
2004	6.18%	651	2,508	357	1,430	338	1,350	121	585	0	0	0	121	293
2005	5.71%	601	3,110	357	1,787	338	1,688	102	585	0	0	0	102	395
2006	5.29%	556	3,666	357	2,145	338	2,026	84	585	0	0	0	84	479
2007	4.88%	515	4,181	357	2,502	338	2,363	68	585	0	0	0	68	547
2008	4.52%	478	4,657	357	2,880	338	2,701	53	585	0	0	0	53	600
2009	4.48%	470	5,126	357	3,217	338	3,038	51	585	0	0	0	51	651
2010	4.48%	470	5,596	357	3,575	338	3,376	51	585	0	0	0	51	702
2011	4.48%	470	6,066	357	3,932	338	3,714	51	585	0	0	0	51	753
2012	4.48%	470	6,535	357	4,289	338	4,051	51	585	0	0	0	51	804
2013	4.48%	470	7,005	357	4,647	338	4,388	51	585	0	0	0	51	855
2014	4.48%	470	7,475	357	5,004	338	4,727	51	585	0	0	0	51	906
2015	4.48%	470	7,944	357	5,362	338	5,084	51	585	0	0	0	51	957
2016	4.48%	470	8,414	357	5,719	338	5,402	51	585	0	0	0	51	1,008
2017	4.48%	470	8,884	357	6,077	338	5,738	51	585	0	0	0	51	1,059
2018	4.48%	470	9,353	357	6,434	338	6,077	51	585	0	0	0	51	1,110
2019	4.48%	470	9,823	357	6,792	338	6,415	51	585	0	0	0	51	1,161
2020	4.48%	470	10,293	357	7,149	338	6,752	51	585	0	0	0	51	1,212
2021	2.23%	236	10,527	357	7,306	338	7,089	(40)	585	0	0	0	(40)	1,172
2022	0.00%	0	10,527	357	7,664	338	7,427	(130)	585	0	0	0	(130)	1,042
2023	0.00%	0	10,527	357	8,221	338	7,785	(130)	585	0	0	0	(130)	912
2024	0.00%	0	10,527	357	8,579	338	8,103	(130)	585	0	0	0	(130)	782
2025	0.00%	0	10,527	357	8,936	338	8,440	(130)	585	0	0	0	(130)	651
2026	0.00%	0	10,527	357	9,294	338	8,778	(130)	585	0	0	0	(130)	521
2027	0.00%	0	10,527	357	9,651	338	9,116	(130)	585	0	0	0	(130)	391
2028	0.00%	0	10,527	357	10,009	338	9,453	(130)	585	0	0	0	(130)	261
2029	0.00%	0	10,527	357	10,366	338	9,791	(130)	585	0	0	0	(130)	130
2030	0.00%	0	10,527	357	10,724	338	10,128	(130)	585	0	0	0	(130)	0

SALVAGE / REMOVAL COST	0.00
YEAR SALVAGE / COST OF REMOVAL	2025
DEFERRED TAXES DURING CONSTRUCTION (SEE PAGE 5)	(154)
TOTAL EQUITY AFUDC CAPITALIZED (SEE PAGE 5)	585
BOOK DEPR RATE - 1A/BIS/PL LIFE	3.33%

DEFERRED TAX AND MID-YEAR RATE BASE CALCULATION  
 PROGRAM METHOD SELECTED REV\_REQ  
 PROGRAM NAME Reederbar Duct System Testing & Repair

(1)	(2)	(3)	(4)	(5) END OF YEAR NET PLANT IN SERVICE	(5a)* ACCUMULATED DEPRECIATION	(5b)* ACCUMULATED DEF TAXES	(6) BEGINNING YEAR RATE BASE	(7) ENDING OF YEAR RATE BASE	(8) MID-YEAR RATE BASE
YEAR	TAX DEPRECIATION SCHEDULE	TAX DEPRECIATION \$(000)	DEFERRED TAX \$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2001	3.75%	385	22	10,388	357	(132)	10,877	10,488	10,688
2002	7.22%	780	163	10,008	715	31	10,488	9,977	10,238
2003	6.88%	703	141	9,851	1,072	172	9,877	9,479	9,728
2004	6.18%	651	121	9,294	1,430	283	9,479	9,001	9,240
2005	5.71%	601	102	8,938	1,787	385	9,001	8,542	8,771
2006	5.29%	588	84	8,579	2,145	479	8,542	8,100	8,321
2007	4.88%	515	68	8,221	2,502	547	8,100	7,674	7,887
2008	4.52%	478	53	7,864	2,880	601	7,674	7,263	7,488
2008	4.48%	470	51	7,508	3,217	652	7,263	6,855	7,088
2010	4.48%	470	51	7,148	3,575	702	6,855	6,447	6,651
2011	4.48%	470	51	6,782	3,932	753	6,447	6,038	6,242
2012	4.48%	470	51	6,434	4,289	804	6,038	5,630	5,834
2013	4.48%	470	51	6,077	4,647	855	5,630	5,221	5,426
2014	4.48%	470	51	5,719	5,004	906	5,221	4,813	5,017
2015	4.48%	470	51	5,382	5,362	957	4,813	4,405	4,608
2016	4.48%	470	51	5,004	5,719	1,008	4,405	3,988	4,200
2017	4.48%	470	51	4,647	6,077	1,059	3,988	3,588	3,782
2018	4.48%	470	51	4,289	6,434	1,110	3,588	3,179	3,384
2018	4.48%	470	51	3,932	6,782	1,161	3,179	2,771	2,975
2020	4.48%	470	51	3,575	7,148	1,212	2,771	2,363	2,567
2021	2.29%	235	(40)	3,217	7,508	1,172	2,363	2,045	2,204
2022	0.00%	0	(130)	2,880	7,864	1,042	2,045	1,818	1,931
2023	0.00%	0	(130)	2,502	8,221	912	1,818	1,580	1,704
2024	0.00%	0	(130)	2,145	8,579	782	1,580	1,383	1,477
2025	0.00%	0	(130)	1,787	8,938	651	1,383	1,136	1,250
2026	0.00%	0	(130)	1,430	9,294	521	1,136	908	1,022
2027	0.00%	0	(130)	1,072	9,651	391	908	682	795
2028	0.00%	0	(130)	715	10,008	261	682	454	588
2029	0.00%	0	(130)	357	10,388	130	454	227	341
2030	0.00%	0	(130)	0	10,724	0	227	0	113

\* Column not specified in worksheet



(1) YEAR	(2) NO YEARS BEFORE IN-SERVICE	(3) PLANT ESCALATION RATE	(4) CUMULATIVE ESCALATION FACTOR	(5) YEARLY EXPENDITURE (%)	(6) ANNUAL SPENDING (\$M)	(7) CUMULATIVE AVERAGE SPENDING (\$M)
1985	-5	0.00%	1.000	0.00%	0.00	0.00
1987	-4	2.55%	1.028	0.00%	0.00	0.00
1989	-3	2.55%	1.052	0.00%	0.00	0.00
1988	-2	2.67%	1.080	38.77%	113.15	56.57
2000	-1	2.68%	1.111	63.23%	200.20	213.25

100.00%      213.34

YEAR	(8) NO YEARS BEFORE IN-SERVICE	(9) CUMULATIVE SPENDING WITH AFUDC (\$M)	(9a) DEBT AFUDC (\$M)	(9b) CUMULATIVE DEBT AFUDC (\$M)	(9c) YEARLY TOTAL AFUDC (\$M)	(9d) CUMULATIVE TOTAL AFUDC (\$M)	(9e) CONSTRUCTION PERIOD INTEREST (\$M)	(9f) CUMULATIVE CPI (\$M)	(9g) DEFERRED TAXES (\$M)	(9h) CUMULATIVE DEFERRED TAXES (\$M)	(10) INCREMENTAL YEAR-END BOOK VALUE (\$M)	(11) CUMULATIVE YEAR-END BOOK VALUE (\$M)
1988	-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1987	-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1989	-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1988	-2	56.57	2.16	2.16	6.08	6.08	4.81	4.81	(1.02)	(1.02)	119.20	119.20
2000	-1	219.30	8.43	10.59	23.57	29.65	18.53	23.34	(3.90)	(4.92)	223.77	342.97

10.99

29.65

23.34

(4.92)

342.97

IN SERVICE YEAR      2001  
PLANT COSTS      285  
AFUDC RATE      10.70%

	BOOK BASIS		
	BOOK BASIS	FOR DEF TAX	TAX BASIS
CONSTRUCTION CASH	8,797	8,797	9,797
EQUITY AFUDC	565		
DEBT AFUDC	331	331	
CPI			730
<b>TOTAL</b>	<b>10,724</b>	<b>10,128</b>	<b>10,527</b>

\* Column not specified in workbook

INPUT DATA -- PART 2  
 PROGRAM METHOD SELECTED REV\_REQ  
 PROGRAM NAME Residential Duct System Testing & Repair

(1)	(2)	(3)	(4)	(5)	(6)*	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COST (C/kWh)	AVOIDED MARGINAL FUEL COST (C/kWh)	INCREASED MARGINAL FUEL COST (C/kWh)	REPLACEMENT FUEL COST (C/kWh)	PROGRAM kW EFFECTIVENESS FACTOR	PROGRAM kWh EFFECTIVENESS FACTOR
1986	0	0	0.00	2.85	2.38	0.00	1.00	1.00
1987	0	0	0.00	2.67	2.42	0.00	1.00	1.00
1988	34,724	34,724	0.00	2.67	2.51	0.00	1.00	1.00
1989	63,880	63,880	0.00	2.88	2.55	0.00	1.00	1.00
2000	88,808	88,808	0.00	3.27	2.88	0.00	1.00	1.00
2001	88,808	88,808	0.00	3.73	2.87	2.26	1.00	1.00
2002	88,808	88,808	0.00	3.58	2.84	2.50	1.00	1.00
2003	88,808	88,808	0.00	3.55	2.82	2.48	1.00	1.00
2004	88,808	88,808	0.00	3.88	3.04	2.88	1.00	1.00
2005	88,808	88,808	0.00	4.01	3.15	3.22	1.00	1.00
2006	88,808	88,808	0.00	4.26	3.33	3.45	1.00	1.00
2007	88,808	88,808	0.00	4.53	3.55	3.76	1.00	1.00
2008	88,808	88,808	0.00	4.68	3.68	3.87	1.00	1.00
2009	88,808	88,808	0.00	4.95	3.88	3.93	1.00	1.00
2010	88,808	88,808	0.00	5.38	3.87	4.38	1.00	1.00
2011	88,808	88,808	0.00	5.57	4.32	4.78	1.00	1.00
2012	88,808	88,808	0.00	5.67	4.52	4.74	1.00	1.00
2013	88,808	88,808	0.00	6.08	4.61	5.02	1.00	1.00
2014	88,808	88,808	0.00	6.27	4.75	5.08	1.00	1.00
2015	88,808	88,808	0.00	6.78	5.17	5.67	1.00	1.00
2016	88,808	88,808	0.00	7.00	5.29	5.80	1.00	1.00
2017	88,808	88,808	0.00	7.22	5.41	5.95	1.00	1.00
2018	88,808	88,808	0.00	7.88	5.68	6.33	1.00	1.00
2019	88,808	88,808	0.00	7.85	5.81	6.44	1.00	1.00
2020	88,808	88,808	0.00	8.03	5.97	6.53	1.00	1.00

\* THIS COLUMN IS USED ONLY FOR LOAD SHIFTING PROGRAMS WHICH SHIFT CONSUMPTION TO OFF-PEAK PERIODS.  
 THE VALUES REPRESENT THE OFF PEAK SYSTEM FUEL COSTS.

AVOIDED GENERATING BENEFITS  
 PROGRAM METHOD SELECTED REV\_REQ  
 PROGRAM NAME Residential Duct System Testing & Repair

YEAR	(2) AVOIDED GEN UNIT CAPACITY COST \$(000)	(3) AVOIDED GEN UNIT FIXED O&M \$(000)	(4) AVOIDED GEN UNIT VARIABLE O&M \$(000)	(5) AVOIDED GEN UNIT FUEL COST \$(000)	(6) REPLACEMENT FUEL COST \$(000)	(7) AVOIDED GEN UNIT BENEFITS \$(000)
1996	0	0	0	0	0	0
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	2,125	300	28	1,541	1,847	2,147
2002	2,057	312	21	1,213	1,533	2,070
2003	1,981	325	16	1,016	1,128	2,210
2004	1,908	338	17	1,119	1,388	1,984
2005	1,837	353	18	1,327	1,585	1,970
2006	1,770	388	20	1,621	1,778	2,002
2007	1,704	384	21	1,820	1,945	1,984
2008	1,642	401	21	1,911	1,888	2,079
2009	1,580	418	18	1,814	1,715	1,916
2010	1,518	438	11	928	1,138	1,758
2011	1,457	455	11	971	1,219	1,678
2012	1,388	478	21	1,829	2,158	1,585
2013	1,335	487	20	1,841	2,183	1,541
2014	1,273	520	19	1,728	2,024	1,515
2015	1,212	543	21	2,108	2,414	1,471
2016	1,151	888	18	1,728	2,048	1,418
2017	1,080	883	15	1,388	1,883	1,403
2018	1,028	818	17	1,880	1,984	1,388
2019	987	843	17	1,874	1,885	1,337
2020	908	671	16	1,573	1,888	1,287

NOM	28,838	8,220	388	30,840	35,457	34,709
NPV	10,574	2,575	121	8,238	10,678	11,833

AVOIDED T&D AND PROGRAM FUEL SAVINGS  
 PROGRAM METHOD SELECTED REV\_REQ  
 PROGRAM NAME Residential Duct System Testing & Repair

(1) YEAR	(2) AVOIDED TRANSMISSION CAP COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST \$(000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAP COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)	(8a)* PROGRAM OFF-PEAK PAYBACK \$(000)
1998	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	278	0
1995	163	38	200	107	185	271	829	0
2000	284	72	386	183	314	507	1,425	0
2001	384	102	486	258	446	704	1,822	0
2002	380	108	488	248	484	713	1,818	0
2003	385	111	476	238	484	723	1,808	0
2004	351	115	467	230	504	734	1,898	0
2005	338	120	458	221	528	747	2,050	0
2006	325	125	450	213	548	761	2,183	0
2007	313	131	444	205	572	777	2,327	0
2008	300	137	437	197	587	784	2,383	0
2009	288	143	431	188	623	812	2,545	0
2010	276	148	425	181	650	831	2,788	0
2011	264	155	419	173	678	851	2,988	0
2012	252	162	414	165	708	874	3,038	0
2013	240	169	408	157	740	898	3,147	0
2014	228	177	405	148	774	923	3,280	0
2015	216	185	401	141	808	950	3,511	0
2016	204	194	397	133	846	979	3,653	0
2017	192	202	394	125	882	1,008	3,775	0
2018	180	210	390	118	920	1,037	3,980	0
2019	168	219	387	110	958	1,068	4,128	0
2020	156	229	387	104	988	1,102	4,216	0

NOM	6,888	3,282	8,141	3,957	14,208	18,084	88,907	0
NPV	2,285	957	3,222	1,483	4,182	5,685	17,852	0

\* THESE VALUES REPRESENT THE COST OF THE INCREASED FUEL CONSUMPTION DUE TO GREATER OFF-PEAK ENERGY USAGE. USED FOR LOAD SHIFTING PROGRAMS ONLY.

TOTAL RESOURCE COST TEST  
PROGRAM METHOD SELECTED REV. REQ  
PROGRAM NAME Residential Duct System Testing & Repair

1	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T&D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
1996	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	2,846	8,857	0	12,802	0	0	276	0	276	(12,526)	(10,489)
1999	0	2,424	8,485	0	10,910	0	472	829	0	1,301	(9,609)	(17,874)
2000	0	1,983	8,940	0	9,923	0	874	1,425	0	2,299	(6,624)	(22,538)
2001	0	0	0	0	0	2,147	1,201	1,822	0	5,289	5,289	(18,138)
2002	0	0	0	0	0	2,070	1,189	1,518	0	5,088	5,088	(16,142)
2003	0	0	0	0	0	2,210	1,189	1,808	0	5,218	5,218	(13,328)
2004	0	0	0	0	0	1,884	1,201	1,888	0	5,181	5,181	(10,772)
2005	0	0	0	0	0	1,870	1,208	2,080	0	5,225	5,225	(8,410)
2006	0	0	0	0	0	2,002	1,211	2,183	0	5,397	5,397	(6,177)
2007	0	0	0	0	0	1,884	1,221	2,327	0	5,532	5,532	(4,081)
2008	0	0	0	0	0	2,079	1,231	2,383	0	5,703	5,703	(2,108)
2009	0	0	0	0	0	1,916	1,243	2,548	0	5,704	5,704	(282)
2010	0	0	0	0	0	1,738	1,288	2,788	0	5,780	5,780	1,288
2011	0	0	0	0	0	1,678	1,271	2,888	0	5,816	5,816	2,857
2012	0	0	0	0	0	1,885	1,288	3,038	0	5,888	5,888	4,372
2013	0	0	0	0	0	1,541	1,307	3,147	0	5,888	5,888	5,708
2014	0	0	0	0	0	1,515	1,328	3,280	0	6,108	6,108	5,888
2015	0	0	0	0	0	1,471	1,351	3,511	0	6,334	6,334	6,141
2016	0	0	0	0	0	1,416	1,376	3,653	0	6,448	6,448	6,245
2017	0	0	0	0	0	1,403	1,401	3,775	0	6,580	6,580	10,278
2018	0	0	0	0	0	1,388	1,427	3,880	0	6,767	6,767	11,247
2019	0	0	0	0	0	1,337	1,458	4,128	0	6,822	6,822	12,157
2020	0	0	0	0	0	1,287	1,488	4,216	0	7,002	7,002	12,888

NOM	0	7,282	25,282	0	32,634	34,709	27,208	68,807	0	121,821	89,187
NPV	0	5,838	18,734	0	25,373	11,833	8,887	17,852	0	38,372	12,988

Discount Rate:  
Benefit/Cost Ratio (Col(11) / Col(6))

8.22 %

1.81

PARTICIPANT COSTS AND BENEFITS  
 PROGRAM METHOD SELECTED REV\_REG  
 PROGRAM NAME Residential Duct System Testing & Repair

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILLS \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O&M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
1986	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0
1988	969	0	3,582	0	4,530	9,957	0	0	9,957	(5,427)	(4,549)
1989	2,808	0	2,888	0	5,778	8,485	0	0	8,485	(2,708)	(6,628)
2000	4,246	0	2,374	0	6,621	6,940	0	0	6,940	(319)	(6,852)
2001	4,880	0	0	0	4,880	0	0	0	0	4,880	(3,707)
2002	4,888	0	0	0	4,888	0	0	0	0	4,888	(822)
2003	4,940	0	0	0	4,940	0	0	0	0	4,940	1,842
2004	5,018	0	0	0	5,018	0	0	0	0	5,018	4,319
2005	5,011	0	0	0	5,011	0	0	0	0	5,011	6,884
2006	5,162	0	0	0	5,162	0	0	0	0	5,162	8,720
2007	5,254	0	0	0	5,254	0	0	0	0	5,254	10,711
2008	5,382	0	0	0	5,382	0	0	0	0	5,382	12,581
2009	5,525	0	0	0	5,525	0	0	0	0	5,525	14,338
2010	5,972	0	0	0	5,972	0	0	0	0	5,972	16,072
2011	6,038	0	0	0	6,038	0	0	0	0	6,038	17,679
2012	6,161	0	0	0	6,161	0	0	0	0	6,161	18,180
2013	6,242	0	0	0	6,242	0	0	0	0	6,242	20,373
2014	6,463	0	0	0	6,463	0	0	0	0	6,463	21,882
2015	6,445	0	0	0	6,445	0	0	0	0	6,445	23,087
2016	6,538	0	0	0	6,538	0	0	0	0	6,538	24,218
2017	6,648	0	0	0	6,648	0	0	0	0	6,648	25,288
2018	6,763	0	0	0	6,763	0	0	0	0	6,763	26,230
2019	6,882	0	0	0	6,882	0	0	0	0	6,882	27,134
2020	7,003	0	0	0	7,003	0	0	0	0	7,003	27,877

NBS	126,288	0	6,894	0	134,182	26,382	0	0	26,382	108,780
BPV	48,779	0	6,882	0	47,711	18,734	0	0	18,734	27,877

In Service of Gas Unit

Discount Rate

Benefit/Cost Ratio ( Col(6) / Col(10))

2001

9.22 %

2.42

RATE IMPACT TEST  
 PROGRAM METHOD SELECTED REV\_REQ  
 PROGRAM NAME Residential Duct System Testing & Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T&D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	2,845	3,562	591	0	6,997	276	0	0	0	276	(6,721)	(5,634)
1989	0	2,424	2,989	1,713	0	7,105	829	472	0	0	1,301	(5,805)	(10,089)
2000	0	1,883	2,374	2,580	0	6,848	1,425	874	0	0	2,299	(4,649)	(13,355)
2001	0	0	0	2,883	0	2,883	4,088	1,201	0	0	5,289	2,288	(11,885)
2002	0	0	0	2,889	0	2,889	3,888	1,189	0	0	5,088	2,100	(10,648)
2003	0	0	0	3,014	0	3,014	4,016	1,189	0	0	6,215	2,202	(8,481)
2004	0	0	0	3,081	0	3,081	3,980	1,201	0	0	5,181	2,120	(6,414)
2005	0	0	0	3,057	0	3,057	4,020	1,205	0	0	6,225	2,188	(7,434)
2006	0	0	0	3,148	0	3,148	4,185	1,211	0	0	5,397	2,248	(6,503)
2007	0	0	0	3,205	0	3,205	4,311	1,221	0	0	5,532	2,327	(5,622)
2008	0	0	0	3,289	0	3,289	4,472	1,231	0	0	5,703	2,413	(4,785)
2009	0	0	0	3,370	0	3,370	4,461	1,243	0	0	5,704	2,334	(4,044)
2010	0	0	0	3,643	0	3,643	4,524	1,258	0	0	5,780	2,138	(3,422)
2011	0	0	0	3,682	0	3,682	4,545	1,271	0	0	5,816	2,134	(2,854)
2012	0	0	0	3,758	0	3,758	4,800	1,288	0	0	5,888	2,130	(2,335)
2013	0	0	0	3,808	0	3,808	4,889	1,307	0	0	6,085	2,167	(1,847)
2014	0	0	0	3,936	0	3,936	4,775	1,328	0	0	6,103	2,167	(1,405)
2015	0	0	0	3,932	0	3,932	4,882	1,351	0	0	6,334	2,402	(855)
2016	0	0	0	3,989	0	3,989	5,089	1,378	0	0	6,468	2,458	(534)
2017	0	0	0	4,058	0	4,058	5,176	1,401	0	0	6,680	2,824	(139)
2018	0	0	0	4,128	0	4,128	5,338	1,427	0	0	6,767	2,641	240
2019	0	0	0	4,188	0	4,188	5,467	1,456	0	0	6,922	2,725	588
2020	0	0	0	4,272	0	4,272	5,513	1,489	0	0	7,002	2,730	927

NOM	0	7,252	6,904	76,407	0	92,984	84,616	27,205	0	0	121,821	29,257
NPV	0	5,638	6,932	24,875	0	37,445	29,485	6,887	0	0	38,372	927

Discount Rate  
 Benefit/Cost Ratio (Col(12) / Col(7))

9.22 %

1.82