

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILE 8672

1328 SCOMM 50: HOUSE SPECIAL COMMITTEE ON STATE LOANS 1985-86

1984 SHCA NSD Forecast*
World Oil Price -- "Marker Crude"
(\$1983/bbl)

<u>Year</u>	<u>Forecast</u>
1985	\$ 26.30
1986	26.30
1987	26.30
1988	26.30
1989	27.09
1990	27.90
1995	32.50
2000	40.00
2005	50.00
2010	60.00
2020	80.00
2030	90.00
2040	100.00
2050	110.00

* Sherman H. Clark Associates "no supply disruption" forecast. Extracted from "Alaska Power Authority Comments on the Federal Energy Regulatory Commission Draft Environmental Impact Statement of May 1984, Volume 3, Appendix I"; August 1984; p. 2-6.

Alaska Department of Revenue Mean Forecast
World Oil Price -- Saudi Medium
(\$1983/bbl)

<u>Fiscal Year</u>	<u>December 1984 Forecast</u>
1985	\$25.70
1986	24.36
1987	23.24
1988	22.81
1989	22.71
1990	23.08
1991	22.99
1992	23.13
1993	23.28
1994	23.43
1995	23.60
1996	23.76
1997	24.16
1998	24.56
1999	24.99
2000	25.42
2001	25.86

Alaska State Legislature



House of Representatives

REPRESENTATIVE
JOHN L. SUND

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WILE IN JUNEAU
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CHAIR, HOUSE SPECIAL COMMITTEE ON LOANS
VICE-CHAIR, JUDICIARY COMMITTEE
MEMBER, SPECIAL COMMITTEE ON OIL AND GAS
MEMBER, RESOURCES COMMITTEE

4/12/85

MEMORANDUM

TO: Members, House Finance Committee

FROM: Rep. John Sund

RE: HB 219 (Four dam pool)

The subcommittee and the representatives of the four dam pool communities have been unable to agree on provisions for a Finance Committee CS for HB 219. I would appreciate your support for a version of the original bill.

The difference between the two proposed committee substitutes is one of approach:

The subcommittee bill sets guidelines for the APA and the communities to negotiate power sales.

The original bill actually sets the terms of the loan. This is in response to two years of negotiations. We have added a new provision for a price reopener to be included 15 years into any contract for power sales.

Initial Loan Principal	\$196,000,000	Ramp Period (Years)	5	4-DAM POOL
Loan Interest Rate	4.22%	D. S. Entry Rate (c/kW.h)	2.00	LOAN REPAYMENT SCHEDULE
Loan Term (Years)	40	Entry Rate Annual Escalation	6.05%	
Total Energy Capability (GW.h/yr)	378,607	D. S. Rate Ceiling (c/kW.h)	2.682940	CASE 4-A

Year	DEBT SERV COMPONENT (c/kW.h)	PAYMENT FROM ELEC REVENUE	ENERGY SALES (GW.h)	UTILIZ- ATION	CURRENT PRINCIPAL BALANCE	INTEREST DUE FROM 4-DAM POOL	ACTUAL PAY- MENT LESS INT. DUE	PRINCIPAL REPAYMENT DEFERRED	DEFERRED PRINCIPAL BALANCE
1985	2.00	3,104,120	155,236	40.99%	196,000,000	3,213,926	(109,806)	1,217,061	1,217,061
1986	2.12	3,849,550	181,496	47.94%	194,892,746	3,756,990	92,561	1,116,790	2,333,851
1987	2.25	4,306,077	191,437	50.56%	193,683,395	3,954,721	351,256	1,102,885	3,436,735
1988	2.39	4,751,347	199,181	52.61%	192,229,154	4,095,753	655,589	1,099,544	4,536,279
1989	2.53	5,212,398	206,042	54.42%	190,474,021	4,285,259	1,007,139	1,099,799	5,636,078
1990	2.68	5,714,288	212,994	56.25%	188,367,083	4,380,727	1,413,561	1,097,712	6,733,790
1991	2.68	5,877,217	219,067	57.86%	185,855,810	4,361,163	1,516,054	1,099,757	7,833,547
1992	2.68	6,097,552	226,907	59.93%	183,239,999	4,449,374	1,638,178	1,087,542	8,921,089
1993	2.68	6,336,412	236,183	62.38%	180,514,278	4,557,334	1,779,108	1,061,884	9,982,973
1994	2.68	6,596,916	245,893	64.35%	177,673,286	4,664,816	1,932,100	1,029,068	11,012,041
1995	2.68	6,853,020	255,433	67.47%	174,712,118	4,760,231	2,092,789	993,250	12,005,291
1996	2.68	6,990,569	260,566	68.82%	171,626,060	4,767,619	2,222,950	989,981	12,995,272
1997	2.68	7,133,591	265,897	70.23%	168,413,149	4,771,637	2,361,954	983,082	13,978,354
1998	2.68	7,283,428	271,482	71.71%	165,068,112	4,772,574	2,510,854	971,743	14,950,097
1999	2.68	7,440,669	277,343	73.25%	161,585,516	4,770,144	2,670,525	955,320	15,905,417
2000	2.68	7,605,529	283,488	74.88%	157,959,671	4,763,757	2,841,772	933,243	16,838,660
2001	2.68	7,732,481	288,220	76.13%	154,184,656	4,725,569	3,006,912	922,268	17,760,940
2002	2.68	7,781,390	290,043	76.61%	150,255,456	4,633,629	3,147,761	939,834	18,700,782
2003	2.68	7,831,907	291,926	77.11%	146,167,861	4,536,197	3,295,720	956,646	19,657,428
2004	2.68	7,884,572	293,889	77.62%	141,915,495	4,433,170	3,451,401	972,381	20,629,809
2005	2.68	7,939,463	295,935	78.16%	137,491,713	4,324,205	3,615,257	986,853	21,616,662
2006	2.68	7,996,661	298,067	78.73%	132,889,602	4,208,891	3,787,770	999,859	22,616,521
2007	2.68	8,056,300	300,290	79.31%	128,101,973	4,086,822	3,969,478	1,011,153	23,627,674
2008	2.68	8,118,488	302,608	79.93%	123,121,342	3,957,546	4,160,942	1,020,474	24,648,147
2009	2.68	8,183,279	305,023	80.56%	117,939,925	3,820,549	4,362,720	1,027,568	25,675,716
2010	2.68	8,250,833	307,541	81.23%	112,549,627	3,675,330	4,575,503	1,032,102	26,707,818
2011	2.68	8,321,231	310,165	81.92%	106,942,022	3,521,308	4,799,922	1,033,753	27,741,570
2012	2.68	8,394,633	312,901	82.55%	101,108,347	3,357,895	5,036,738	1,032,125	28,773,696
2013	2.68	8,471,148	315,753	83.40%	95,039,483	3,184,428	5,286,719	1,026,818	29,800,514
2014	2.68	8,550,882	318,725	84.18%	88,725,946	3,000,199	5,550,663	1,017,397	30,817,911
2015	2.68	8,634,023	321,824	85.00%	82,157,866	2,804,469	5,829,554	1,003,334	31,821,245
2016	2.68	8,720,652	325,053	85.85%	75,324,978	2,596,405	6,124,247	984,130	32,805,376
2017	2.68	8,810,983	328,420	86.74%	68,216,601	2,375,152	6,435,831	959,147	33,764,523
2018	2.68	8,905,124	331,929	87.67%	60,821,622	2,139,753	6,765,371	927,769	34,692,291
2019	2.68	9,003,262	335,587	88.64%	53,128,483	1,889,200	7,114,062	889,265	35,581,556
2020	2.68	9,105,559	339,400	89.64%	45,125,156	1,622,397	7,483,162	842,864	36,424,421
2021	2.68	9,212,202	343,375	90.69%	36,799,130	1,338,166	7,874,035	787,707	37,212,128
2022	2.68	9,323,352	347,518	91.79%	28,137,388	1,035,234	8,288,118	722,882	37,935,010
2023	2.68	9,439,197	351,836	92.93%	19,126,387	712,229	8,726,968	647,379	38,582,389
2024	2.68	9,559,978	356,338	94.12%	9,752,841	367,680	9,192,299	560,052	39,142,441
2025	1.34	4,825,870	361,030	95.36%	(310)	1,565,665	3,260,185		35,881,945
2026	1.32	4,825,870	365,921	96.65%		1,435,278	3,390,592		32,491,353
2027	1.30	4,825,870	371,019	98.00%		1,299,654	3,526,216		28,965,137
2028	1.28	4,825,870	376,334	99.40%		1,158,605	3,667,265		25,297,872
2029	1.27	4,825,870	378,607	100.00%		1,011,915	3,813,955		21,483,917
2030	1.27	4,825,870	378,607	100.00%		859,357	3,966,514		17,517,403
2031	1.27	4,825,870	378,607	100.00%		700,696	4,125,174		13,391,229
2032	1.27	4,825,870	378,607	100.00%		535,689	4,290,181		9,102,048
2033	1.27	4,825,870	378,607	100.00%		364,082	4,461,788		4,640,260
2034	1.27	4,825,870	378,607	100.00%		185,610	4,640,260		(0)
TOTALS		347,628,966	15,046,933			151,628,966	196,000,000	39,142,441	

MEMORANDUM OF UNDERSTANDING

Between the Alaska Power Authority
and
Representatives of the Four Dam Pool Communities
governing
Power Sales Contracts for the Four Dam Pool

Representatives of the APA and the Four Dam Pool utilities (Ketchikan, Kodiak, Copper Valley, Wrangell, and Petersburg) have reached agreement in principle on the terms and conditions of a power sales contract for the sale of power from the Solomon Gulch, Swan Lake, Lake Tyee, and Terror Lake hydroelectric projects (the "Initial Project"). Although the specific details of such a contract must still be resolved and drafted, the undersigned representatives hereby agree to recommend to their governing bodies the approval of power sales contracts embodying, among other things, the principles set forth in this Memorandum.

1. The Alaska Power Authority ("APA") and the purchasing utilities of the Four-Dam Pool communities ("Purchasing Utilities") agree to enter into a power sales agreement that will run for 50 years, subject to periodic renegotiations and other conditions set forth below.
2. At the end of the contract period, there will be no debt service component of the wholesale rate charged by the APA for power from the four projects. Debt service payments that may be required to pay for additions and expansions of the four projects that are made subsequent to the execution of these agreements will be governed by future agreements.
3. The Purchasing Utilities agree to pay a wholesale rate for energy purchased from the APA that is generated by the four projects that has a debt service component, and a component relevant to all other annual costs.
4. The annual costs exclusive of the debt service component shall include costs of on-site operations and maintenance, safety inspections and investigations, insurance, project-specific administrative and general expenses, and renewals and replacements.
5. Annual costs referred to in Section 4 will be based on prudent utility practice, and will be subject to mutual agreement arrived at through an annual process that establishes an operating budget for the coming year. An O&M

oversight committee composed of all parties to the agreement will be established. In the event disputes over these annual costs cannot be resolved by the parties, the matter will be referred to arbitration by a certified engineer mutually agreeable to the parties.

6. All annual costs referred to in Section 4 will be pooled and divided by the total annual sales from the four projects, so that all Purchasing Utilities pay the same annual cost component of the wholesale rate.
7. The debt service component of the wholesale rate has two elements: an element paid for energy shown in Schedule A as "forecast sales," and an element paid for energy in addition to the "forecast sales," which is referred to as "additional sales."
8. The "additional sales" debt service element in Schedule A will be charged only after the total annual sales from all four projects exceed the "forecast sales" for that year; that is, the distinction between "forecast sales" and "additional sales" applies to the entire four dam system (as configured at the time this agreement is executed).
9. The purchasing utilities will schedule the energy produced by the projects into their load ahead of energy from other sources, except from existing hydroelectric projects.
10. Upon the initiation of either party, the debt service rates shown in Schedule A may be renegotiated after 15 years. The contract shall require reasonable notice of intent to renegotiate rates, and the contract may direct the parties to consider certain factors and conditions in establishing a new rate schedule.
11. The parties to this agreement do not expect that the composite wholesale rate that results from this agreement will be less than the composite wholesale rate charged by the APA for energy produced from the Bradley Lake hydroelectric project.
12. The APA shall bear the risk of uninsured project failures, substandard project performance, and failure of any Purchasing Utility to make payments required by the contract.

DATED May 8, 1985

ALASKA POWER AUTHORITY

By: [Signature]

CITY OF KETCHIKAN

By: [Signature]

COPPER VALLEY ELECTRIC ASSOCIATION

By: Andrew E. Hoge

KODIAK ELECTRIC ASSOCIATION

By: William E. Eckhardt

CITY OF WRANGELL

By: James K. Smith

CITY OF PETERSBURG

By: Jim Farnel

SCHEDULE A

YEAR	FORECAST SALES (MWH)	DEBT SERVICE RATE FOR FORECAST SALES (CENTS/KWH)	DEBT SERVICE RATE FOR ADDITIONAL SALES (CENTS/HWH)
1986	181,496	2.6	1.6
1987	191,437	2.8	1.8
1988	199,181	3.2	2.2
1989	206,042	3.5	2.5
1990	212,994	4.0	3.0
1991	219,067	4.0	3.0
1992	226,907	4.0	3.0
1993	236,183	4.0	3.0
1994	245,893	4.0	3.0
1995	255,439	4.0	3.0
1996	260,533	4.0	3.0
1997	265,897	4.0	3.0
1998	271,482	4.0	3.0
1999	277,343	4.0	3.0
2000	283,488	4.0	3.0
2001	288,220	4.0	3.0
2002	290,043	4.0	3.0
2003	291,926	4.0	3.0
2004	293,889	4.0	3.0
2005	295,935	4.0	3.0
2006	298,067	4.0	3.0
2007	300,290	4.0	3.0
2008	302,608	4.0	3.0
2009	305,023	4.0	3.0
2010	307,541	4.0	3.0
2011	310,165	4.0	3.0
2012	312,901	4.0	3.0
2013	315,753	4.0	3.0
2014	318,725	4.0	3.0
2015	321,824	4.0	3.0
2016	325,053	4.0	3.0
2017	328,420	4.0	3.0
2018	331,929	4.0	3.0
2019	335,587	4.0	3.0
2020	339,400	4.0	3.0
2021	343,375	4.0	3.0
2022	347,518	4.0	3.0
2023	351,836	4.0	3.0
2024	356,338	4.0	3.0
2025	361,030	4.0	3.0
2026	365,921	4.0	3.0
2027	371,019	4.0	3.0

<u>YEAR</u>	<u>FORECAST SALES</u> <u>(MWH)</u>	<u>DEBT</u> <u>SERVICE RATE FOR</u> <u>FORECAST SALES</u> <u>(¢1 KWH)</u>	<u>DEBT</u> <u>SERVICE RATE FOR</u> <u>ADDITIONAL SALES</u> <u>(¢1 KWH)</u>
2028	376,334	4.0	3.0
2029	378,607	4.0	3.0
2030	378,607	4.0	3.0
2031	378,607	4.0	3.0
2032	378,607	4.0	3.0
2033	378,607	4.0	3.0
2034	378,607	4.0	3.0
2035	378,607	4.0	3.0
2036	378,607	4.0	3.0
2037	378,607	4.0	3.0

M E M O R A N D U M

TO: John Hartle

DATE: May 2, 1985

FROM: Eric Redman and Doug Rosenberg *ER & DR*

SUBJECT: What Happened In Your Absence

1. The filthy lawyers fed at the public trough for hours and hours, with no one but the cleaning person here to restrain them.

2. There's good news about your diskette LOANS2! It's been liberated from its unpromising childhood here in Juneau, adopted by two terrific daddies from Seattle, and will grow up amid the joys of the Pacific Northwest. (We couldn't find another diskette onto which to duplicate our documents. But we did duplicate your document SB 186 INTENT onto diskette LOANS, and since that was the only document besides ours on the diskette, all you've lost is the value of one diskette.) If you begin a custody fight for LOANS2, we may relent and return it, even though it will never really be happy here.

3. Attached please find the fruits of our labors:

(a) A one-page draft of a Memorandum of Understanding, not yet shown to anyone and eager to retain that status. Short, sweet, clever.

(b) A one-page Exhibit A for same, showing the whole-sale power rate schedule and its components, including the scheduled debt service component, with notes. (This, incidentally, is H-2 without additional loads, otherwise known as the H-2 base case.)

(c) A print-out of Exhibit B for same, showing the internal rate of return to the state and all the data (well, most of the data) used to derive it. This shows both the H-2 base case and the H-2 additional sales case.

4. On Friday, May 3rd, Doug will transmit copies of all the foregoing to each of the Four Dam Pool communities in preparation for next week's meeting. We will also try to reach Heath and/or Harrison to tell them:

(a) That we are trying for an MOU approach, and why we are doing so; and

(b) To emphasize that we now hope to have the Four Dam Pool signed off on a draft of the MOU on the 7th, with meeting with Heath and Harrison set for the 8th, in the hope that by the evening of the 8th Heath can tell Sen. Faiks and Sen. Halford that an MOU is in hand, and that it will produce a respectable rate of return to the state.

Draft
5/2/85

MEMORANDUM OF UNDERSTANDING

Between the Alaska Power Authority
and
Representatives of the Four Dam Pool Communities
governing
Power Sales Contracts for the Four Dam Pool

Representatives of the APA and the Four Dam Pool utilities (Ketchikan, Kodiak, Copper Valley, Wrangell, and Petersburg) will recommend that their governing boards approve power sales contracts that embody the principles set forth below:

1. Rates: Subject to a rate reopener provision (below), the purchasers will pay in each year a wholesale power rate consisting of three components:

(a) Debt service: 4¢ per kwh for all purchases except for purchases in excess of current forecasts and purchases during the 5-year "ramp" period. See Exhibit A.

(b) Operations & Maintenance (O&M): Actual O&M costs for the Pool divided by actual power sales to the Pool, expressed in cents per kwh. See Exhibit A for estimates.

(c) Renewals & Replacement Fund (R&R): \$500,000 per year to fund the project R&R capital account.

2. Projected Rate Of Return To State: The wholesale power rate schedule is projected to produce a return to the state of 6+ percent under the "additional sales" forecasts and 5+ percent under conservative forecasts. See Exhibit B. The parties regard these forecasts as reasonable.

3. Rate reopeners: APA may give a 7-year notice of rate increases at any time after the 8th contract year. Increased rates may not produce average wholesale power costs for Four Dam Pool communities in excess of average wholesale power costs projected for Railbelt utilities at that time. Purchasers may reduce or eliminate purchases of APA power when increased rates take effect or at any time after 15th contract year.

4. O & M responsibilities: The purchasers must pool and pay all on-site O&M expenses. An O&M oversight committee will provide supervision. APA will perform inspections and investigations, buy insurance, and include those costs in O&M.

5. Sharing of risks: Purchasers will bear the risk of increased rates caused by project failure, poor performance, and deviations in actual O&M costs or actual power sales from forecasts, up to a limit of 0.5¢ per kwh increase over the forecasted base case rates shown in Exhibit A.

6. Commerce Department loan to APA: The power sales contracts shall take effect when the terms of the loan have been modified in a manner that permits the contracts to be effective in accordance with the principles of this Memorandum.

EXHIBIT A: WHOLESALE POWER RATE SCHEDULE

Alaska Power Authority--Four Dam Pool

Memorandum of Understanding

YEAR	SCHEDULED DEBT SERVICE (CENTS/KWH)	ESTIMATED O & M COST (CENTS/KWH)	PROJECTED WHOLESALE POWER RATE (CENTS/KWH)
--A--	---B---	---C---	---D---
1986	2.60	2.72	5.32
1987	2.80	2.72	5.52
1988	3.20	2.76	5.96
1989	3.50	2.81	6.31
1990	4.00	2.87	6.87
1991	4.00	2.94	6.94
1992	4.00	3.00	7.00
1993	4.00	3.04	7.04
1994	4.00	3.08	7.08
1995	4.00	3.13	7.13
1996	4.00	3.24	7.24
1997	4.00	3.36	7.36
1998	4.00	3.47	7.47
1999	4.00	3.59	7.59
2000	4.00	3.72	7.72
2001	4.00	3.86	7.86
2002	4.00	4.06	8.06
2003	4.00	4.27	8.27
2004	4.00	4.48	8.48
2005	4.00	4.71	8.71
2006	4.00	4.94	8.94
2007	4.00	5.19	9.19
2008	4.00	5.45	9.45
2009	4.00	5.72	9.72
2010	4.00	6.01	10.01
2011	4.00	6.30	10.30
2012	4.00	6.61	10.61
2013	4.00	6.94	10.94
2014	4.00	7.28	11.28
2015	4.00	7.63	11.63
2016	4.00	8.00	12.00
2017	4.00	8.38	12.38
2018	4.00	8.78	12.78
2019	4.00	9.20	13.20
2020	4.00	9.63	13.63
2021	4.00	10.08	14.08
2022	4.00	10.55	14.55
2023	4.00	11.04	15.04
2024	4.00	11.54	15.54
2025	4.00	12.07	16.07
2026	4.00	12.61	16.61
2027	4.00	13.18	17.18
2028	4.00	13.76	17.76
2029	4.00	14.50	18.50
2030	4.00	15.36	19.36
2031	4.00	16.27	20.27
2032	4.00	17.24	21.24
2033	4.00	18.27	22.27
2034	4.00	19.35	23.35
2035	4.00	20.51	24.51

Notes:

1. O & M based on forecast loads without Additional Sales.
2. O & M includes \$500,000 per year capital cost for Renewals and Replacements.
3. O & M inflation assumed to be 6% per year.
4. Additional Sales to be charged for Debt Service at 1 Cent/kWh less than Scheduled Debt Service.

Case Number 2
 Loan Principal (\$=000's) \$190,000
 O&M Cost Inflation Rate 6.00%

EXHIBIT B: PROJECTED OPERATING RESULTS AND RATES OF RETURN
 Alaska Power Authority--Four Dam Pool
 Memorandum of Understanding

Average Rate of Return:
 Without Additional Sales 5.47%
 With Additional Sales 6.10%

YEAR	SCHEDULED DEBT SVC. (CENTS/KWH)	PROJECTED			OPERATIONS & MAINTENANCE					TOTAL O & M (\$=000's)
		O & M COST (CENTS/KWH)	WHL. POWER RATE (CENTS/KWH)	SALES (MWH)	GROSS REVENUES (\$=000's)	NET REVENUES (\$=000's)	ADMIN (\$=000's)	ON-SITE (\$=000's)	R & R (\$=000's)	
A	B	C	D	E	F	G	H	I	J	K
1986	2.60	2.72	5.32	181,496	9,658	5,219	863	3,576	500	4,939
1987	2.80	2.72	5.52	191,437	10,566	5,860	915	3,791	500	5,205
1988	3.20	2.76	5.96	199,181	11,861	6,874	970	4,018	500	5,488
1989	3.50	2.81	6.31	206,042	12,998	7,711	1,028	4,259	500	5,787
1990	4.00	2.87	6.87	212,994	14,624	9,020	1,090	4,515	500	6,104
1991	4.00	2.94	6.94	219,067	15,203	9,263	1,155	4,785	500	6,440
1992	4.00	3.00	7.00	226,907	15,873	9,576	1,224	5,073	500	6,797
1993	4.00	3.04	7.04	236,183	16,622	9,947	1,298	5,377	500	7,175
1994	4.00	3.08	7.08	245,893	17,411	10,336	1,375	5,700	500	7,575
1995	4.00	3.13	7.13	255,439	18,217	10,718	1,458	6,042	500	8,000
1996	4.00	3.24	7.24	260,533	18,871	10,921	1,546	6,404	500	8,450
1997	4.00	3.36	7.36	265,897	19,562	11,136	1,638	6,788	500	8,927
1998	4.00	3.47	7.47	271,482	20,291	11,359	1,737	7,196	500	9,432
1999	4.00	3.59	7.59	277,343	21,062	11,594	1,841	7,627	500	9,968
2000	4.00	3.72	7.72	283,488	21,876	11,840	1,951	8,085	500	10,536
2001	4.00	3.86	7.86	288,220	22,667	12,029	2,068	8,570	500	11,138
2002	4.00	4.06	8.06	290,043	23,378	12,102	2,192	9,084	500	11,777
2003	4.00	4.27	8.27	291,926	24,130	12,177	2,324	9,629	500	12,453
2004	4.00	4.48	8.48	293,889	24,926	12,256	2,463	10,207	500	13,170
2005	4.00	4.71	8.71	295,935	25,768	12,337	2,611	10,820	500	13,931
2006	4.00	4.94	8.94	298,067	26,659	12,423	2,768	11,469	500	14,736
2007	4.00	5.19	9.19	300,290	27,602	12,512	2,934	12,157	500	15,591
2008	4.00	5.45	9.45	302,608	28,600	12,604	3,110	12,886	500	16,496
2009	4.00	5.72	9.72	305,023	29,657	12,701	3,296	13,659	500	17,456
2010	4.00	6.01	10.01	307,541	30,775	12,802	3,494	14,479	500	18,473
2011	4.00	6.30	10.30	310,165	31,958	12,907	3,704	15,348	500	19,552
2012	4.00	6.61	10.61	312,901	33,211	13,016	3,926	16,269	500	20,695
2013	4.00	6.94	10.94	315,753	34,537	13,130	4,162	17,245	500	21,906
2014	4.00	7.28	11.28	318,725	35,940	13,249	4,411	18,279	500	23,191
2015	4.00	7.63	11.63	321,824	37,425	13,373	4,676	19,376	500	24,552
2016	4.00	8.00	12.00	325,053	38,997	13,502	4,957	20,539	500	25,995
2017	4.00	8.38	12.38	328,420	40,662	13,637	5,254	21,771	500	27,525
2018	4.00	8.78	12.78	331,929	42,424	13,777	5,569	23,077	500	29,147
2019	4.00	9.20	13.20	335,587	44,289	13,923	5,903	24,462	500	30,865
2020	4.00	9.63	13.63	339,400	46,263	14,076	6,258	25,930	500	32,687
2021	4.00	10.08	14.08	343,375	48,354	14,235	6,633	27,485	500	34,619
2022	4.00	10.55	14.55	347,518	50,566	14,401	7,031	29,135	500	36,666
2023	4.00	11.04	15.04	351,836	52,909	14,573	7,453	30,883	500	38,836
2024	4.00	11.54	15.54	356,338	55,389	14,754	7,900	32,736	500	41,136
2025	4.00	12.07	16.07	361,030	58,015	14,941	8,374	34,700	500	43,574
2026	4.00	12.61	16.61	365,921	60,795	15,137	8,877	36,782	500	46,158
2027	4.00	13.18	17.18	371,019	63,739	15,341	9,409	38,989	500	48,898
2028	4.00	13.76	17.76	376,334	66,855	15,553	9,974	41,328	500	51,802
2029	4.00	14.50	18.50	378,607	70,024	15,644	10,572	43,808	500	54,880
2030	4.00	15.36	19.36	378,607	73,287	15,644	11,206	46,436	500	58,143
2031	4.00	16.27	20.27	378,607	76,745	15,644	11,879	49,222	500	61,601
2032	4.00	17.24	21.24	378,607	80,411	15,644	12,592	52,176	500	65,267
2033	4.00	18.27	22.27	378,607	84,297	15,644	13,347	55,306	500	69,153
2034	4.00	19.35	23.35	378,607	88,417	15,644	14,148	58,624	500	73,272
2035	4.00	20.51	24.51	378,607	92,783	15,644	14,997	62,142	500	77,639

-----ADDITIONAL SALES TRUE-UP CALCULATION-----

YEAR	ADDITIONAL SALES (MWH)	GROSS REVENUE (\$=000'S)	DEBT SVC. TRUE-UP (\$=000'S)	O & M TRUE-UP (\$=000'S)	NET REVENUE (\$=000'S)	MELOD RATE (CENTS/KWH)	YEAR
A	L	M	N	O	P	Q	R
1986	10,828	10,234	108	295	5,392	5.11	1986
1987	21,656	11,761	217	589	6,250	5.14	1987
1988	32,484	13,796	325	895	7,588	5.43	1988
1989	42,312	15,668	423	1,188	8,769	5.66	1989
1990	54,140	18,341	541	1,552	10,644	6.08	1990
1991	54,140	18,960	541	1,592	10,887	6.16	1991
1992	54,140	19,660	541	1,622	11,200	6.23	1992
1993	54,140	20,432	541	1,645	11,572	6.28	1993
1994	54,140	21,244	541	1,668	11,960	6.34	1994
1995	54,140	22,078	541	1,696	12,342	6.41	1995
1996	54,140	22,792	541	1,756	12,546	6.51	1996
1997	54,140	23,546	541	1,818	12,760	6.62	1997
1998	54,140	24,338	541	1,881	12,983	6.73	1998
1999	54,140	25,173	541	1,946	13,218	6.84	1999
2000	54,140	26,053	541	2,012	13,464	6.96	2000
2001	54,140	26,925	541	2,092	13,653	7.10	2001
2002	54,140	27,742	541	2,198	13,726	7.26	2002
2003	54,140	28,605	541	2,310	13,801	7.44	2003
2004	54,140	29,518	541	2,426	13,880	7.63	2004
2005	54,140	30,482	541	2,549	13,962	7.82	2005
2006	54,140	31,501	541	2,677	14,047	8.03	2006
2007	54,140	32,579	541	2,811	14,136	8.25	2007
2008	54,140	33,717	541	2,951	14,229	8.47	2008
2009	54,140	34,921	541	3,098	14,325	8.71	2009
2010	54,140	36,193	541	3,252	14,426	8.96	2010
2011	54,140	37,537	541	3,413	14,531	9.22	2011
2012	54,140	38,957	541	3,581	14,640	9.49	2012
2013	54,140	40,458	541	3,756	14,754	9.78	2013
2014	54,140	42,045	541	3,939	14,873	10.07	2014
2015	54,140	43,721	541	4,130	14,997	10.39	2015
2016	53,554	45,422	536	4,283	15,109	10.72	2016
2017	50,187	46,876	502	4,206	15,142	11.14	2017
2018	46,678	48,390	467	4,099	15,177	11.58	2018
2019	43,020	49,966	430	3,957	15,214	12.04	2019
2020	39,207	51,608	392	3,776	15,252	12.53	2020
2021	35,232	53,315	352	3,552	15,292	13.05	2021
2022	31,089	55,090	311	3,280	15,333	13.60	2022
2023	26,771	56,935	268	2,955	15,377	14.19	2023
2024	22,269	58,851	223	2,571	15,422	14.81	2024
2025	17,577	60,840	176	2,121	15,469	15.46	2025
2026	12,686	62,903	127	1,600	15,517	16.16	2026
2027	7,588	65,042	76	1,000	15,568	16.90	2027
2028	2,273	67,259	23	313	15,622	17.68	2028
2029	0	70,024	0	0	15,644	18.50	2029
2030	0	73,287	0	0	15,644	19.36	2030
2031	0	76,745	0	0	15,644	20.27	2031
2032	0	80,411	0	0	15,644	21.24	2032
2033	0	84,297	0	0	15,644	22.27	2033
2034	0	88,417	0	0	15,644	23.35	2034
2035	0	92,783	0	0	15,644	24.51	2035

Note: Rates of Return are based upon Net Revenues (columns G and P), which include Debt Service payments and capital contributions to the Renewals and Replacements Fund, plus interest on reserves.

STATE OF ALASKA

OFFICE OF THE GOVERNOR

OFFICE OF MANAGEMENT AND BUDGET

DIVISION OF STRATEGIC PLANNING

BILL SHEFFIELD, GOVERNOR

POUCH AD
JUNEAU, ALASKA 99811
PHONE: (907) 465-3568

May 10, 1985

The Honorable Jan Faiks
Co-Chair
Senate Finance Committee
Pouch V
Juneau, AK 99811

Dear Senator Faiks:

For you and the other members of the Senate Finance Committee to have some perspective on the effect of the power sales agreement that would result from the Memorandum of Understanding of May 8, I have prepared the analysis that is enclosed. The numbers are based on our most current computer simulations of the contract. The avoided cost analysis is very crude, but I believe it presents a reasonably accurate estimate of the range of effects we can expect. We will continue to refine and revise the numbers shown here, but overall they reflect our best view of the impacts of the proposed contracts on wholesale power rates from the Four Dam Pool projects.

Sincerely,



Gordon S. Harrison
Associate Director

GSH/dmc/85F-255

Enclosures

cc: Senate Finance Committee

Comparative Analysis, Wholesale Rates (¢/kwh)

4 Dam Pool

\$196 million loan, 4% inflation;
\$100,000/yr. R&R

Bradley Lake

\$200 million; 4%
inflation;

Additional Sales

Revenue Bond Financing

<u>Year</u>	0	35 MWH	10%	12%
1986	5.1	4.5		
1987	5.3	4.7		
1988	5.7	5.1		
1989	6.0	5.5		
1990	6.5	6.0		
1991	6.5	6.0	5.7	6.7
1992	6.5	6.0	5.9	6.7
1993	6.5	6.1	5.9	6.7
1994	6.5	6.1	5.8	6.6
1995	6.5	6.1	5.8	6.5
1996	6.6	6.1	5.8	6.5
1997	6.6	6.2	5.7	6.4
1998	6.7	6.2	5.7	6.4
1999	6.7	6.3	5.7	6.3
2000	6.7	6.3	5.6	6.3

(ROR: 5.0%)

(ROR: 5.7%)

Variables that Influence Rates

4 Dam Pool

1. amount of additional sales
2. inflation on O&M
3. size of renewals and replacement (R&R) fund

Bradley Lake

1. size of revenue bond issue
2. interest rate
3. inflation on O&M

Avoided Cost Analysis: 4 Dam Pool

<u>Year</u>	<u>Avoided Cost (¢/kwh)</u>		<u>Rates (¢/kwh)</u>	
	7¢ @ 4%/yr.	9¢ @ 4%/yr.	0 Additional Sales	35 MWH Additional Sales
1986	7.0	9.0	5.1	4.5
1987	7.3	9.4	5.3	4.7
1988	7.6	9.7	5.7	5.1
1989	7.9	10.1	6.0	5.5
1990	8.2	10.5	6.5	6.0
1991	8.5	10.9	6.5	6.0
1992	8.9	11.4	6.5	6.0
1993	9.2	11.8	6.5	6.1
1994	9.6	12.3	6.5	6.1
1995	10.0	12.8	6.5	6.1
1996	10.4	13.3	6.6	6.1
1997	10.8	13.8	6.6	6.2
1998	11.2	14.4	6.7	6.2
1999	11.7	14.9	6.7	6.3
2000	12.1	15.6	6.7	6.3

Savings in Year 2000: ¢9.3 - 5.4/kwh

Assumptions

1986 diesel fuel 83¢/gallon
14.5 kwh/gallon
some amount for fixed costs, depreciation

Avoided Cost Analysis: Bradley Lake

Year	<u>Avoided Cost (¢/kwh)</u>			<u>Rates (¢/kwh)</u>	
	Chugach (1.5 Tier)	Beluga Coal (REA Financing)	Matanuska Coal (11% Financing)	10%	12%
1991	6.1	10.0		5.7	6.7
1992	6.2	10.5	9.1	5.9	6.7
1993	6.5	10.5	9.7	5.9	6.7
1994	10.1	10.8	10.5	5.8	6.6
1995	10.8	11.0	11.5	5.8	6.5
1996	11.4	11.4	12.8	5.8	6.5
1997	11.9	11.7	13.3	5.7	6.4
1998	12.7	12.0	13.3	5.7	6.4
1999	13.3	12.4		5.7	6.3
2000	14.1	12.8		5.6	6.3

Savings in year 2000: ¢8.5 - 6.5

MEMORANDUM OF UNDERSTANDING

Between the Alaska Power Authority
and
Representatives of the Four Dam Pool Communities
governing
Power Sales Contracts for the Four Dam Pool

Representatives of the APA and the Four Dam Pool utilities (Ketchikan, Kodiak, Copper Valley, Wrangell, and Petersburg) have reached agreement in principle on the terms and conditions of a power sales contract for the sale of power from the Solomon Gulch, Swan Lake, Lake Tyee, and Terror Lake hydroelectric projects (the "Initial Project"). Although the specific details of such a contract must still be resolved and drafted, the undersigned representatives hereby agree to recommend to their governing bodies the approval of power sales contracts embodying, among other things, the principles set forth in this Memorandum.

1. The Alaska Power Authority ("APA") and the purchasing utilities of the Four-Dam Pool communities ("Purchasing Utilities") agree to enter into a power sales agreement that will run for 50 years, subject to periodic renegotiations and other conditions set forth below.
2. At the end of the contract period, there will be no debt service component of the wholesale rate charged by the APA for power from the four projects. Debt service payments that may be required to pay for additions and expansions of the four projects that are made subsequent to the execution of these agreements will be governed by future agreements.
3. The Purchasing Utilities agree to pay a wholesale rate for energy purchased from the APA that is generated by the four projects that has a debt service component, and a component relevant to all other annual costs.
4. The annual costs exclusive of the debt service component shall include costs of on-site operations and maintenance, safety inspections and investigations, insurance, project-specific administrative and general expenses, and renewals and replacements.
5. Annual costs referred to in Section 4 will be based on prudent utility practice, and will be subject to mutual agreement arrived at through an annual process that establishes an operating budget for the coming year. An O&M

oversight committee composed of all parties to the agreement will be established. In the event disputes over these annual costs cannot be resolved by the parties, the matter will be referred to arbitration by a certified engineer mutually agreeable to the parties.

6. All annual costs referred to in Section 4 will be pooled and divided by the total annual sales from the four projects, so that all Purchasing Utilities pay the same annual cost component of the wholesale rate.
7. The debt service component of the wholesale rate has two elements: an element paid for energy shown in Schedule A as "forecast sales," and an element paid for energy in addition to the "forecast sales," which is referred to as "additional sales."
8. The "additional sales" debt service element in Schedule A will be charged only after the total annual sales from all four projects exceed the "forecast sales" for that year; that is, the distinction between "forecast sales" and "additional sales" applies to the entire four dam system (as configured at the time this agreement is executed).
9. The purchasing utilities will schedule the energy produced by the projects into their load ahead of energy from other sources, except from existing hydroelectric projects.
10. Upon the initiation of either party, the debt service rates shown in Schedule A may be renegotiated after 15 years. The contract shall require reasonable notice of intent to renegotiate rates, and the contract may direct the parties to consider certain factors and conditions in establishing a new rate schedule.
11. The parties to this agreement do not expect that the composite wholesale rate that results from this agreement will be less than the composite wholesale rate charged by the APA for energy produced from the Bradley Lake hydroelectric project.
12. The APA shall bear the risk of uninsured project failures, substandard project performance, and failure of any Purchasing Utility to make payments required by the contract.

DATED May 8, 1985

ALASKA POWER AUTHORITY

By: R. L. Hest

CITY OF KETCHIKAN

By: Paul E. Fennell

COPPER VALLEY ELECTRIC ASSOCIATION

By: Andrew E. Hoge

KODIAK ELECTRIC ASSOCIATION

By: William E. Hoge

CITY OF WRANGELL

By: James H. Hoge

CITY OF PETERSBURG

By: Jim Hoge

SCHEDULE A

YEAR	FORECAST SALES (MWH)	DEBT	DEBT
		SERVICE RATE FOR FORECAST SALES (CENTS/KWH)	SERVICE RATE FOR ADDITIONAL SALES (CENTS/HWH)
1986	181,496	2.6	1.6
1987	191,437	2.8	1.8
1988	199,181	3.2	2.2
1989	206,042	3.5	2.5
1990	212,994	4.0	3.0
1991	219,067	4.0	3.0
1992	226,907	4.0	3.0
1993	236,183	4.0	3.0
1994	245,893	4.0	3.0
1995	255,439	4.0	3.0
1996	260,533	4.0	3.0
1997	265,897	4.0	3.0
1998	271,482	4.0	3.0
1999	277,343	4.0	3.0
2000	283,488	4.0	3.0
2001	288,220	4.0	3.0
2002	290,043	4.0	3.0
2003	291,926	4.0	3.0
2004	293,889	4.0	3.0
2005	295,935	4.0	3.0
2006	298,067	4.0	3.0
2007	300,290	4.0	3.0
2008	302,608	4.0	3.0
2009	305,023	4.0	3.0
2010	307,541	4.0	3.0
2011	310,165	4.0	3.0
2012	312,901	4.0	3.0
2013	315,753	4.0	3.0
2014	318,725	4.0	3.0
2015	321,824	4.0	3.0
2016	325,053	4.0	3.0
2017	328,420	4.0	3.0
2018	331,929	4.0	3.0
2019	335,587	4.0	3.0
2020	339,400	4.0	3.0
2021	343,375	4.0	3.0
2022	347,518	4.0	3.0
2023	351,836	4.0	3.0
2024	356,338	4.0	3.0
2025	361,030	4.0	3.0
2026	365,921	4.0	3.0
2027	371,019	4.0	3.0

YEAR	FORECAST SALES (MWH)	DEBT SERVICE RATE FOR FORECAST SALES (¢1 KWH)	DEBT SERVICE RATE FOR ADDITIONAL SALES (¢1 KWH)
2028	376,334	4.0	3.0
2029	378,607	4.0	3.0
2030	378,607	4.0	3.0
2031	378,607	4.0	3.0
2032	378,607	4.0	3.0
2033	378,607	4.0	3.0
2034	378,607	4.0	3.0
2035	378,607	4.0	3.0
2036	378,607	4.0	3.0
2037	378,607	4.0	3.0

Sen Ziegler

ARLON R. TUSSING & ASSOCIATES, INC.
2720 Rainier Bank Tower • Seattle, Washington 98101 • (206) 447 0321

18 April, 1985

Mayor Don Koenigs
Petersburg, Alaska 99833

Dear Don:

It was a pleasure to visit Petersburg last weekend, meet you and your fellow citizens, and participate in the Rotary Club's annual benefit. I hope I shall be able to return soon.

The enclosed memo outlines the strategy we talked about for resolving the impasse over the four hydro projects. I think this strategy would result in almost exactly the kind of resolution the parties are looking for, whether they know it or not. For both tactical and selfish reasons, however, the memo strikes me as a bit too detailed and too specific, and I am a bit uneasy about seeing it circulated widely in its present form.

The best tactic for getting acceptance of a proposal of this kind is usually to let its details emerge from discussion and negotiation, so that the various parties (the municipalities, the Power Authority, the Administration, and key legislators) all feel that they have contributed to or at least influenced the final product. No matter how fair and well thought-out a it may be, a settlement proposal emanating from one side of a controversy tends to be perceived by those on other sides as a bargaining position to be diluted and whittled away at. A motion that comes unsolicited from an outside party like myself who has no stake in the dispute is likely to be treated even less seriously.

My selfish reservations about circulating a fully thought-out proposal stem from the fact that I occasionally like to get paid for performing the kind of service at which I am best, and from which I try to make a living. At the very worst, I would like to have been asked formally by one or more of the parties to make a stab at solving their problem. The kernel of an idea contained in the enclosed memorandum is, however, already the most critical part of any contribution I might make on behalf of a settlement. It is this one seemingly simple concept that might not have appeared absent my involvement. The further refining of the concept, its formulation in legislative language, and its public advocacy would all consume more professional effort and are, by that token, more "billable" than what I have already offered. But there are a host of people who are as good or almost as good as I am at these tasks, if not better. With this memo in hand, one may legitimately ask, who needs Tussing?

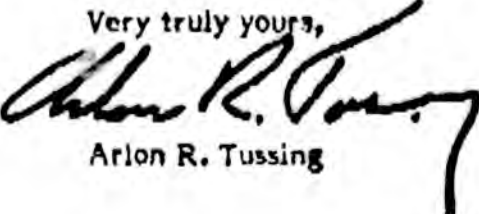
Here is the idea, nevertheless, for what it is worth, in sufficient detail for all the parties to understand. From the moment you and I began discussing the problem last weekend, I was convinced this general approach was superior --- from almost everyone's standpoint --- to the House Bill or anything else that has yet surfaced publicly.

I do want to see the strategy proposed and tried, even if it generates no personal credit and no professional fee. My druthers, however, lean toward getting a small retainer either from the municipalities or, preferably, from one of the responsible committees of the legislature to explore the general idea with the municipalities, the Power Authority, the Governor, and legislative leaders; to conduct research on relevant regulatory standards and precedents; to draft a proposal that could be incorporated into legislative language; and to appear at hearings on its behalf. I believe this is also the approach most likely to be successful.

The politics of the question I now leave to your judgment, however, and you are free to use this memorandum however seems most appropriate. My associate, Connie Barlow, has spoken with Senate Resources Committee staff about the approach, and I expect to get Senator Sturgeslewski's reaction within a few days. Let me know what you do and what happens, and I will keep you similarly informed.

Also enclosed are a statement for my late travel expenses, and a some nice publicity I will be getting in Forbes magazine next week.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Arlon R. Tussing', with a long, sweeping flourish extending from the end of the name.

Arlon R. Tussing

Apportionment of Four-Dam Pool Project Costs
A Suggested Settlement Procedure

OBJECT

The object of the procedure suggested here is the rational and fair apportionment of costs incurred by the Alaska Power Authority for electrical-generation and transmission facilities designed to serve the four municipalities. The key elements of such a settlement are ---

An impartial valuation of the projects, reflecting only the necessary and prudently incurred outlays for their construction, and

An impartial determination of the fair market rate of interest due the State on the value of the project.

The State would thus write off as a loss any expenditures determined to be unnecessary or to have resulted from imprudence or mismanagement, while electricity costs to the municipalities would be based upon an unsubsidized interest rate. This settlement would differ from others now being proposed in that it would be ---

Permanent,

Uncoupled from the politics of Statewide rural energy assistance, or future Railbelt energy planning, and

Free from dependence upon speculative and controversial estimates of future "avoided costs" of electricity in the four municipalities.

Because such a settlement apportions accountability for all sunk costs directly to the parties responsible for their occurrence, its precedent should make similar fiscal disasters less likely in the future.

ARBITRATION PANEL

The settlement would be determined in binding arbitration, conducted by a panel of three arbitrators, each of whom would have substantial experience as a commissioner, administrative law judge, or hearing officer of a federal, state or provincial public utility commission in the United States or Canada (other than the Alaska Public Utilities Commission). Two arbitrators, appointed respectively by the four municipalities and the Alaska Power Authority, would select the third.

TERMS OF REFERENCE

The arbitrators would determine the fair value, for purposes of sale or rate-making, of the facilities constructed by the Alaska Power Authority to serve the four municipalities. They would use the same standards that regulatory utility commissions throughout North America customarily use in reviewing the capital costs that electric utilities propose to include in their "rate bases", namely:

- (1) Are the facilities "used and useful", and
- (2) Were the expenditures "necessary and prudently incurred"?

The arbitrators would also determine a fair market interest rate, and the appropriate amortization schedule to be applied to the fair value of the facility, for the purposes of sale or electric rate-making.

STANDARDS

1. Valuation of Facilities. In determining fair value, the arbitrators would

- 1.1 Review the construction and interim financing costs actually incurred by the Alaska Power Authority, and
- 1.2 Determine what portion of these costs were necessary and prudently incurred for used and useful plant. Specifically, the arbitrators would be authorized to exclude from fair value any expenditures that were incurred ---
 - 1.2.1 For generating capacity in excess of that required to serve reasonably anticipated demand by the respective municipalities,
 - 1.2.2 Because of mismanagement or gross negligence, or
 - 1.2.3 After the date (if any) at which a prudent management would have concluded that a project as planned was not economically viable, and thus would have downsized the project or terminated construction in order to hold losses to unavoidable levels.

In determining any expenditures to be excluded from fair value, however, the arbitrators would be authorized to consider the extent to which the municipalities or their representatives may have knowingly encouraged, abetted, or agreed to unnecessary or imprudent outlays.

2. Fair market interest rate. In determining a fair market interest rate, the arbitrators would consider ---

- 2.1 The actual or probable cost of revenue- or general-obligation borrowing by the municipalities for power-project financing,
- 2.3 The actual or prospective cost of revenue- or general-obligation borrowing by the Alaska Power Authority for power-project financing, and
- 2.4 The actual or prospective returns to the State of Alaska from alternative uses of any State funds committed to the projects.

3. Appropriate amortization schedule. In determining the appropriate schedule for amortizing the sums determined to constitute the fair value of facilities, the arbitrators would follow generally accepted principles of power-project financing and public-utility ratemaking, but would be authorized to consider ---

- 3.1 Projected electricity-demand trends in the respective municipalities,
- 3.2 The prospective impact of the amortization schedule (when combined with the fair value of the facilities and the fair market rate of interest) on consumer costs of electricity, and
- 3.3 The present and prospective financial capacity of the respective municipalities.

EXECUTION OF THE SETTLEMENT

The decision of the arbitrators would be final and binding. Upon a determination of the fair value of each of the facilities, the fair market interest rate, and appropriate amortization schedule(s), the Alaska Power Authority and the municipalities would be required to execute contracts which, at the option of the respective municipalities, would provide for one of the following ---

1. Sale of electricity by the Alaska Power Authority to the municipalities for a lump-sum monthly charge that reflects the fair value of the facilities, the fair market interest rate, and the appropriate amortization schedule,
2. Sale of facilities to one or more of the municipalities, at fair value plus interest to the date of sale at the fair market interest rate --- with long-term financing arranged by the municipalities themselves, or
3. Sale of facilities to one or more of the municipalities at fair value --- with long-term financing by the State at the fair market interest rate and with the appropriate amortization schedule.

In the event a municipality elected to purchase facilities, the Alaska Power Authority would retain title to any project capacity that exceeds the capacity the arbitrators have determined to be used and useful for valuation purposes.

ly! No information was forthcoming on this point. What about Merrill Lynch? "We don't talk about what our customers do. I doubt you're going to find out about Phillips from anybody," Merrill told the committee.

But further inquiries revealed a good reason for brokers not to be diligent in tracking down wayward holders who left no instructions. Shares left in the custody of brokers in margin or managed-cash-type accounts could have been used to make substantial windfall profits—for the broker.

A reminder of the Phillips recapitalization will be helpful here. The company decided to exchange debt for half its shares. For every two shares tendered, the holder was to get back a package of debt securities worth \$62 and one share of stock. Before the offer expired, the old stock was trading at around \$49 a share. That means that the new stock would be worth only \$36. Why? Twice \$49 minus \$62 equals \$36. (Because not all shares were tendered, the shareholders actually got bonds for slightly more than half their stock—but that is a fine point.) Again, in round numbers: A 200-share, \$9,800 position in the old stock was going to turn into \$3,600 worth of new stock and \$6,200 worth of bonds.

The expected disparity between the value of old Phillips and the value of new Phillips created considerable demand for borrowed Phillips stock. Short-sellers and various other investors had been maneuvering to increase their profit on the Phillips tender (see box, p. 57). These efforts created a demand for untendered Phillips shares, to replace shares that had been called away or sold short. While the tender was under way, the premium exacted by lenders of Phillips stock certificates ranged from \$4 to \$9 a share, prices that one arbitrager terms "obscene." In most circumstances, stock certificates are lent at no premium at all.

Phillips shares owned by alert investors were, of course, en route to Phillips and unavailable. But what about stock owned by the aforementioned dummies? Some of it, apparently, was available. When stock is bought on margin, the investor signs an agreement allowing his broker to lend out his securities. Also, most so-called managed cash accounts are automatically deemed margin accounts. Margin accounts owned by customers who didn't respond to the tender thus provided a potential supply of lendable certificates.

Precisely how much lending took

place from nontendering margin accounts? Evidence is not available on this point. Brokers complained of enormous premiums being charged for borrowed stock, but few would admit to lending it. Shearson Lehman Brothers Senior Executive Vice President Victor Samra averred that he lent stock, the stock being obtained "from institutional investors, mostly." (Apparently some institutions did not have time to read the prospectus, either. It came less than two weeks before the tendering deadline.) Samra said he wasn't sure whether his firm got a premium.

It further appears that none of the

loan premiums found their way back to the accounts of the nontendering customers who made it all possible. The following testimony is from a vice president at a small firm in New York City, who was guaranteed anonymity in return for his statement. "Everyone supped at the expense of the negligent Phillips shareholder who left his stock in street name. That guy was carved up on the table."

The committee concludes that the brokers did nothing wrong, or at least nothing actionable. If it weren't the case that 8.6% of the world is slow on its feet, how would some others get rich? ■

The natural gas industry is moving into the world of competition. Some will sink and some will swim, says Arlon Tussing, who has a winning record on predictions.

The coming world of anything goes

By Tom Mack

ARLON R. TUSSING has run up an enviable record predicting swings in the volatile energy business, particularly in natural gas. He called the turn on prices in 1980. In 1981 he forecast that pipelines then contracting to take high-priced gas or pay for it anyway would break their contracts and take the lawsuits, which they did. In 1983 he predicted the industry would rediscover the Sherman Act. The state of Illinois is now suing Panhandle Eastern Corp., and Mobil Corp. is suing Transco Energy Co., both on antitrust grounds.

What next, FORBES asked Tussing (pronounced too-sing), a 51-year-old, blue-eyed and jut-jawed Seattle-based consultant.

Deregulation, in fact if not in law, is here, he says, and companies in the gas business aren't particularly happy about it. Says Tussing:

"In this new market, wellhead prices will be determined by competition, and neither the regulators nor the regulated companies will be able

to control the price. The market value of gas will be determined in competition with other fuels and electricity. It will only be the sheerest of accidents if the margin between the price of gas in the field and the market value to final customers equals the rates that would be set by regulators under traditional cost-of-service pricing.

"One of the biggest problems is that many executives think just like regulators and Congress. Regardless of their official economic philosophies, they don't like or trust competitive markets. They prefer a visible hand, however palsied, to an invisible one."

Today the pipelines' average costs for gas run from \$2 per thousand cubic feet (mcf) to more than \$4 per mcf. That disparity will narrow in two to three years as contracts expire and are renegotiated. Then, says Arlon Tussing, the gas transportation costs will be important.

"You'll see the competitive advantage shifting. For instance, Transco and Columbia Gas System have among the highest purchase costs, and they've been the most troubled



Energy consultant Arlon R. Tussing
Everything that isn't expressly prohibited can be done.

pipelines competing in the Middle Atlantic states. But they both have mature systems that have been pretty much written off. If either could get its gas purchase costs down (Columbia Gas in April agreed to lower the price for its gas to keep from losing more business), it would be in a relatively strong competitive position."

Most gas distributors—the companies taking gas from pipelines and delivering it to the customers—still resist competition, and that's where Tussing expects to see the greatest turmoil.

"They are still mentally and emotionally in the 1970s. Most rate cases at the state level are still for higher rates. Depending on how price-sensitive their load [demand] is, they can get into what I call the death spiral, where higher rates and load loss drive each other."

Attempts by pipelines or distributors to hold their monopolies will be futile, he thinks. Transco and Panhandle Eastern are being sued under antitrust laws for using their monopoly position to block competition (that

is, not moving competitive gas) or otherwise gain an advantage.

A second trend is the building of pipelines to bypass higher-priced suppliers. Bethlehem Steel is trying to bypass Northern Indiana Public Service Co. by building a spur to a pipeline a few miles away owned by American Natural Resources Co. (now merging with Coastal Corp.). Bethlehem would be able to buy gas for about \$1 per mcf under NipSCO's rate. There are already two applicants, and there may be four, to build an interstate pipeline into California's Kern County to serve the growing enhanced oil recovery market there. The purpose is to bypass both Pacific Gas & Electric and its regulator, the California Public Utilities Commission, notorious for the high prices it tolerates for industrial customers in the name of the consumer.

"The basic natural monopoly argument," says Tussing, "is that the cost of service for one pipeline is less than the cost of service for two smaller-scale pipelines. It follows that it is also possible for everybody to get a

lower rate under monopoly. But the test of that is in the doing. If the monopoly, even a regulated monopoly, is mainly used to rip off customers, then the natural monopoly argument crumbles. So if Bethlehem or any other customer can get a better rate by building an additional pipeline, then let them do it. If it is cheaper for everybody collectively to be the only pipe in the area, then NipSCO and PG&E had damn well better provide cheaper service to everyone."

Tussing also predicts the natural gas industry will face competition from electric utilities. Today those utilities are raising rates. "That will cause a fall in consumption from normal markets, so they will be desperately trying to flog off extra power for anything over variable costs," he says. "The electric utilities haven't quite caught on yet, but they will."

With all these troubles, Tussing sees some pipelines and gas distributors pushed to the wall. "There's a one-word term for that: bankruptcy." He hesitates, then adds that there are also shotgun weddings.

But it isn't all gloom. Says Tussing: "One area of enormous potential for arbitrage profits and for marketing and transportation is replacing the physical movement of gas with exchange and displacement transactions. The pipeline system in North America is like a big swimming pool: You can take a bucket of water from one end and dump a bucket of water in the other end, without physically carrying the bucket from one end to the other."

For example, instead of building a pipeline to carry western Canadian gas to New England, there's a proposal to use existing lines to carry the Canadian gas to the Midwest. It would be traded for Texas gas, aimed at the Midwest, which could be diverted eastward through existing lines.

Tussing thinks Kenneth L. Lay, now chairman of Houston Natural Gas Corp., represents the new type of thinking coming into the business. "While Lay was president of Transco, Transco invented the whole notion of using spot market gas to regain lost customers [lost because its contract gas prices were too high]," Tussing says. Lay has directed \$1.2 billion in acquisitions for Houston Natural, and with two other companies has proposed one of the pipelines into Kern County, Calif. "Something he did at Transco and is now doing at HNG is completely swamping the regulators with proposals within the existing framework, which keeps them off-balance," says Tussing.

Buyer beware

If Arlon Tussing is right, natural gas companies—and their stocks—are in for it. "Whenever an industry gets deregulated, everybody gets clobbered initially, even the good companies. So earnings will be under pressure for all companies for several years," says Foster Corwith, an analyst for Dean Witter Reynolds.

But there will ultimately be winners. Analyst John Olson of Drexel Burnham Lambert likes the prospects, over the long haul, of Houston Natural Gas, which recently moved into Florida and California through acquisitions, and Lear Petroleum Corp., an aggressive pipeline in Texas and Oklahoma.

Among the big interstate pipelines, MidCon Corp. and InterNorth Inc. are considered standouts for their efficiency, low-cost gas and competitive ability. They also avoided most of the contract and regulatory problems that plague others. Others getting favorable reviews include Texas Eastern Corp. and Coastal Corp.

The pariah of the group is Columbia Gas System. It has high-cost gas (Columbia is trying to renegotiate its contracts), fading markets (particularly in the East and Midwest), crippling contract problems and regulation by two federal and seven state agencies. "It's got a lot of things going against it," says Tussing.

On the plus side, of course, stock prices already have been pumped up in anticipation of takeovers, as other pipelines seek access to markets and low-cost gas. Producing properties also are spun off into publicly traded limited partnerships as an antitakeover technique, which pushes up stock prices.

But there's a necessary caution. "The problem is that you can't tell who is shark and who is lunch," says R. Gamble Baldwin, analyst for First Boston Corp. The effect, he says, is that "the natural gas group by and large is overvalued in relation to its fundamental outlook."—T.M.

He sees this as an evolution of management, drawing analogies to banking. "Natural gas has been pretty much a deadhead industry in both pipelines and distribution, and the whole presumption has been that anything not specifically approved by regulators in advance is out of bounds. That's where the bankers were 20 years ago. Bankers did only what bankers had always done.

"But something happened. Bankers left behind the old banker mentality. They assumed that everything that isn't expressly prohibited can be done, and put the onus on the regulators to stop them. Once you had some people with imagination out there, any deal became doable under some combination or permutation of existing institutions and rules. What Congress and the regulators have to say—interstate

banking is a good example—has no relevance.

"We're moving in that direction with natural gas. The most interesting things are the ones not foreseeable, because they will be the result of innovations by contrarian individuals. You now have a handful of people who start with the premise that everything not expressly forbidden is allowable." ■

Meet Pat McGovern, the centimillionaire magnate of computer publishing—as unlikely a magnate as ever was.

As you give

By Richard Rohrer

PATRICK MCGOVERN plans to give away his computer publishing empire when his International Data Group, outside Boston, reaches \$1 billion in sales. He says he will then turn over 51% of the firm to his employees. McGovern has already sold 15% of the company to a profit-sharing employee trust.

Says McGovern: "I won't have at

IDG what's happened in so many other businesses, where the owner dies or sells and a new team replaces the people who have given so much blood, sweat, toil and tears. What we try to do is build a total common family."

Of course, IDG still has a good way to go; its revenues in 1984, triple those of 1981, were just \$225 million, but McGovern figures that revenues will reach the \$1 billion mark by 1990.

McGovern is an intensely private person. IDG has 41 corporate units, each with its own president and business plan. His name appears only in *Computersworld*. But he founded, controls and runs the U.S.' biggest chain of computer publications, 62 at last count, as well as the biggest computer market research firm. IDG is private, with profits reportedly running about \$20 million a year and no debt. His wealth is estimated at \$250 million or so, and he says he's been offered around \$500 million for his company.

McGovern, a construction manager's son, caught the computer bug in the tenth grade after reading a book. Thirty-three years later he still remembers the title: *Giant Brains*, or, *Machines That Think*. Inspired, he built a computer that was unbearable in ticktacktoe. That won him a scholarship to MIT. He helped pay for school by editing a Boston-based computer magazine run by Edmund Berkeley, the author of *Giant Brains*. After college McGovern put an idea to work. He realized that IBM's rivals lacked information about computer customers; remember, this was 1964. He persuaded firms like Xerox, Burroughs and Univac to prepay \$7,500 each for a census report, gathered in \$75,000

5/9/85

MAY 10 1985

MEMORANDUM:

RE: House Bill 219 Relating to Power Development Loans

Absence of my signature on the Memorandum of Understanding

Dated May 8, 1985 between APA and Four Dam Pool Communities indicates I do not endorse this agreement as it relates to HB 219.

Within this memo I strongly object to articles (1) periodic renegotiations, (7) two debt elements, (10) renegotiate in 15 years, (11) ties to Bradley Lake

Project. Therefore do not support this memorandum, nor the passage of the bill.

Recommend deferring bill until next session.

Further recommend this entire issue be determined in binding arbitration, conducted by a panel of three arbitrators. Two arbitrators, appointed respectively by the municipalities and Alaska Power Authority, would select the third.

Suggested Terms of Reference for Arbitration:

Are the facilities used and useful, and were the expenditures necessary and prudently incurred?

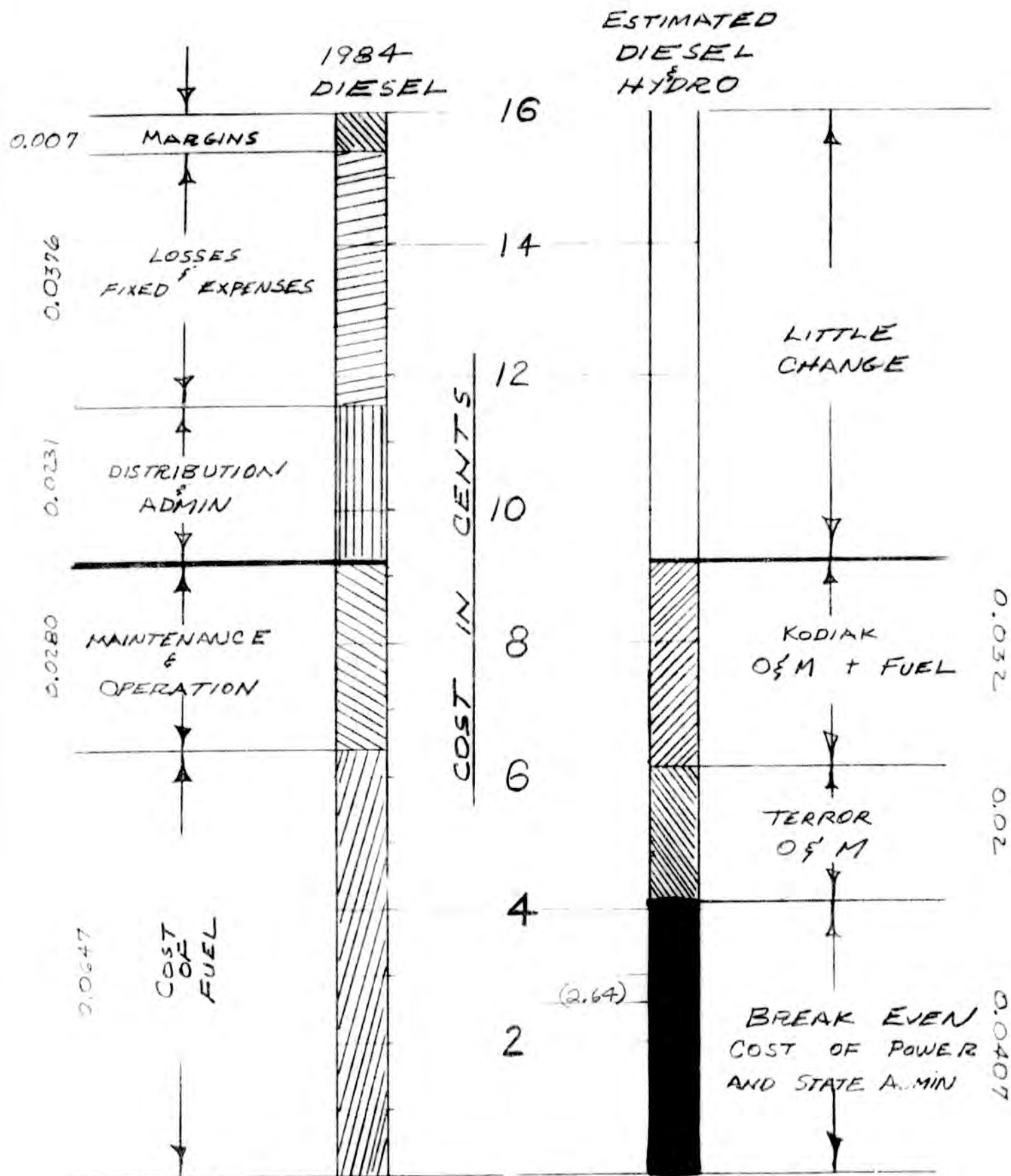
The arbitrators would determine a fair market rate of interest, the appropriate amortization schedule to be applied to the fair value of the facilities for the purposes of sale or electric rate making.

Sincerely,

Don Koenigs

Don Koenigs

KODIAK ELECTRIC ASSN AVERAGE COST OF POWER (AT CONSUMER METER)



3/4/85

MEMORANDUM

TO: Rep. John Sund, Chair
House Special Committee on Loans

FROM: J. Hartle, AA JH

RE: Electric power rates for four dam pool communities (HB 219)

	KEA	CVEA	KPU	Petersburg	Wrangell
Operations and Maintenance	2.0	2.76	2.91	4.59	4.59
Debt Service	2.68	2.68	2.68	2.68	2.68
Total APA	4.68	5.44	5.59	7.27	7.27
Retail Rate*	16.6	19.1** 15.1	10.0	11.1	14.9

* Per KWH at 750 KWH/Month, as of 2/16/85, with ~~debt service as proposed~~
~~in HB 219~~

** 19.1 = Copper River; 15.1 = Valdez

KEA = Kodiak
CVEA = Copper Valley
KPU = Ketchikan

RETAIL RATES
(cents per kwh)

<u>Community</u>	<u>@ 200 kwh/month</u>	<u>@ 500 kwh/month</u>	<u>@ 700 kwh/month</u>
Copper Valley			
-Glenallen	23.5	20.1	18.8
-Valdez	21.3	16.0	14.7
Kodiak	19.0	18.1	17.5
Wrangell	19.1	16.3	15.7
Petersburg	13.9	11.7	11.2
Ketchikan	14.3	10.8	10.2

COMPONENTS OF THE RATES
(cents per kwh)

<u>Community</u>	<u>APA O&M</u>	<u>APA Debt Service</u>	<u>Other^{*/}</u>	<u>Total (@ 700 kwh/month)</u>
Copper Valley				
-Glenallen	2.76	2.64	13.4	18.8
-Valdez	2.76	2.64	9.3	14.7
Kodiak	2.00	2.64	12.86	17.5
Wrangell	4.59	2.64	8.47	15.7
Petersburg	4.59	2.64	3.97	11.2
Ketchikan	2.26	2.64	5.3	10.2

^{*/} "Other" includes distribution, administrative and general, reserve generation, and other generation (other hydro as well as diesel in the case of Ketchikan and Petersburg.)

HARRY S. SUNDBERG

P.O. Box 613

Wrangell, Alaska 99929

907-874-3594

Oct. 28, 1985

Mr. Bruce Tennant
Assistant District Attorney
State of Alaska
1031 West 4th, Suite 200
Anchorage, Alaska 99501

Dear Mr. Tennant:

Re: Tyee Power Project

I will shortly be shipping you a box containing data, (Thomas Bay Power Commission records), which hopefully will help you in the court case. For your information, the following is a brief history of the events which developed into the Tyee Project as we now know it.

Thomas Bay Power Commission was founded by the communities of Wrangell and Petersburg in 1974, with responsibility of devising means for obtaining hydro power and for the two cities. Funds for these studies were grant appropriated from the legislature, made possible by our state representative, Mr. Haugen.

Our first engineering study was done at Swan Lake (Thomas Bay), about twelve miles from Petersburg. This study was completed in Nov. 1975 by R.W. Beck and Assoc., and was a mostly P.W. first phase project with an estimated completion date cost in the order of 75 million dollars. This study was presented to state and federal agencies at that time, (Dept. of Commerce and Alaska Power Administration), and was turned down as too large a project for the two communities. The Thomas Bay Power Commission was instructed to reduce the studies to a project with an initial first phase capacity which would be compatible with the present loads and load forecasts for the immediate future.

By August 1977, possible sites had been narrowed down to four, by R.W. Beck.

They were:	Swan Lake	7.5 Mw	@ 79 Million dollars
	Swan Lake	8.0 Mw	@ 87 Million dollars
	Swan Lake	7.9 Mw	@ 49 Million Dollars
	Swan Lake	3.9 Mw	@ 22 Million dollars

With the exception of Swan Lake, all possible projects had salmon runs besides being mostly for the KW generated, and no 2nd phase potential. Other sites which could be considered also had salmon streams or were in wilderness areas which could result in lengthy litigation if an attempt was made to utilize them.

The Dept. of Geological Survey Bulletin 1211-B, dated in 1969, listed three potential hydro power sites in the nearby area, near Mt. Lake in Burroughs, near Hetchikan, and Eagle and Tyee Lakes in Gradfield Canal near Wrangell. A copy of this booklet was obtained and Rotherford and Assoc., who were doing some engineering work at Petersburg, Crystal Lake hydro facility, were asked to do a study with the limited information available at the time, to see if there was potential for power at Tyee, Eagle Lake being a high elevation lake having substantial runs of all salmon species within its boundaries. The preliminary study proved promising, so the firm was hired to do an in depth study with the intent to apply for an F.B.R.C. permit. The stipulation at the time was to design a project with a first phase capability to take care of the two communities present needs, with a second phase available when the demand required it.

The initial plan developed originally with two 5 Mw turbines in the first phase, with a single 15 Mw additional turbine when the second phase became necessary. This was changed to two 7½ Mw generators at the first phase and a single 15 Mw at the second, to more balance the system. Power lines were planned for the first phase capability, with wood poles supporting the 62 Mw capacity to Wrangell and 75 KVA on to Petersburg. Estimated cost of this project was in the forty to fifty million dollar range. For the second phase, needed after the turn of the century, it would be necessary to upgrade the entire transmission line components as well as the required additional generation and control costs, as it would then require the 115 KVA lines, steel towers, controls, etc, bringing the costs up considerably.

In the two years that passed before the F.E.R.C. permit application was hand carried to Washington D.C. in December 1979, a great many things occurred relating to energy in Alaska. Thomas Bay Power Commission had received \$300,000.00 dollars from the Dept. of Commerce for the study, and the balance from the newly formed Alaska Power Authority, to pay for the \$20,000.00 study needed to apply for the F.E.R.C. permit. As the APA had been established by the legislature to make the power resources of the state available to all the citizens of the state, and had the capability of acquiring the expertise necessary to bring this about, it became obvious to the Thomas Bay Power Authority members that the time had arrived to turn the project over to the APA for the actual construction. With the concurrence of the cities, the project was turned over to the APA for construction with the proviso that after completion the cities would have three options. 1. APA would own and run the project, 2. APA could lease the project to Thomas Bay Power Commission, or 3. The cities could buy the project. (later legislation and other events have apparently eliminated these options for the cities).

Many people have asked how our Tyee project increased to become a 20 Mw facility and such associated costs, when we were told by the state and federal government at the beginning to keep our project within the present power needs of the two communities. I believe it should be clear to all that the Tyee project under APA planning, was no longer a project for Wrangell and Petersburg, but part of a long term objective to provide a power grid for south east Alaska. With the Tyee project in the center of south east Alaska, it was only logical to start change orders to upgrade transmission lines to carry such future loads and to increase the generating capacity. In fact, one of the last major change orders during tunnel excavation was to lower the intake bay depth to allow for a constant 20 Mw output from the facility. (Remembering that the Wrangell/Petersburg area would be needed until well after the turn of the century). This indicates to me at least, that the Tyee facility was planned for constant 20 Mw. output to supply power to the entire southeast area within the proposed grid system, not just the intermittent demands that occur in our communities such as ours.

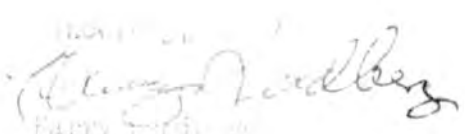
I do not fault the APA staff entirely for this. They were given a mandate by the legislature to make a power rich state, and they were given with a great deal of enthusiasm. Had the money held out, Southeast Alaska would have had an intertie system for security and cheaper rates, the entire area would have had Sustine, meaning that they still need, and the entire state would have been a part of other power sources and methods including rate stabilization programs supported by the legislature. The money was shared equally among the power users statewide, would have resulted in affordable electric rates for the entire state, something we all appreciate.

The difficulties between the APA and the citizens of Wrangell and Petersburg over the past few years, have been among other things, the insistence

that the communities are liable for all the costs. Despite the fact that, as stated, the project was overbuilt by the roads. Had the Thomas Commission and the two communities had ownership, we are quite certain that the project would have been built with the grant funds appropriated by the legislature, simply because it would have remained a smaller project.

Be that as it may, we now have a project that will supply communities with power far into the future, and it will have the capability to be an integral part of an area of intertie when such a development eventually occurs. Also, through the efforts of state officials, the legislature, local officials and the public, we have an agreement which hopefully will resolve and set to rest local, regional, and statewide concerns concerning these hydro projects. Once the agreement is implemented, it will result in stable rates for constituents and hopefully resolve the old attitudes the narrow and old attitudes which in the past have hampered attempts to bring state development into being.

As you have indicated, I will be sending you copies of all data that we have which is pertinent to the Tyee project and the project for runs. I should emphasize, however, that with both the ARA and the Tyee Hydro Assoc. having their offices in Anchorage, we soon found ourselves excluded from much of the early stages in the project. This early exclusion of our input did much to contribute to turn the construction phase into a mess, and as a result we had little or no input on the decisions which shaped the project from a 2 phase plan into a single full scale facility. This also resulted in our having no records on any decisions regarding orders or information changes to the concept of the entire project. Because of this, our files may not help you a great deal, but they certainly welcome to have and hope that they provide you and staff some of the information you might need.

Very truly,

Barry Smith
Box 613
Anchorage, Alaska 99509
207-54

2/6/86

Harry S. Sundberg
P.O. box 613
Wrangell, AK 99929

Dear Harry:

Thanks very much for your note and copy of your letter to Assistant D.A. Bruce Tennant.

Your points are well taken. There are many lessons to be learned from our experience with the Tyee Project. One lesson the APA and all State agencies should learn from this experience is not to leave policy decisions (e.g. the size of the Tyee) to consultants. Local decision-making and local control of projects is the only way to keep spending under control.

I certainly hope the State can win the current lawsuit over cost overruns on Tyee. This could have a significant impact on power rates for Wrangell and Petersburg in the long term by reducing the state debt service component.

With the passage, last session, of House Bill 219 we have finally managed to construct a framework for agreements with the APA for power sales to the communities. Now we are in for the ongoing work of making those agreements function.

Two items we will be monitoring closely in my office are those of insurance costs for the project and APA spending of program receipts from power sales. Insurance costs are significantly higher than forecast and we are getting less comprehensive coverage than last year. We are looking into the possibility of a state insurance pool for hydro projects. The APA, I feel, will always push to attribute whatever costs they can to power sales program receipts. I will be working with the House Finance Committee to do what we can about this ongoing problem.

Anyway, thanks again for your letter; let me know if there is anything I can do.

Sincerely,

John Sund, Representative

Loan Principal (\$=000's)

\$196,000

0.5% Inflation Rate

4.00%

Rate of Return Floor

3.50%

Rate of Return Ceiling

8.00%

Change in Base Load Forecast

0.00%

YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/MMH)	0.5% RATE (CENTS/MMH)	TOTAL RATE (CENTS/MMH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	0.5% EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)	ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/MMH)	YEAR
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1986	181,496	0	2.64	2.30	4.94	8,966	0	4,438	4,528	6,860	15,680	0	196,000	2,332	3.5%	10,027	5.52	1986
1987	191,437	0	2.64	2.80	5.44	10,414	0	4,616	5,799	6,860	15,680	0	196,000	1,061	3.5%	10,841	5.66	1987
1988	199,191	0	2.84	2.80	5.64	11,234	0	4,800	6,434	6,860	15,680	0	196,000	426	3.5%	11,234	5.64	1988
1989	206,042	0	3.19	2.90	6.09	12,548	0	4,992	7,556	6,860	15,680	0	196,000	0	3.9%	12,548	6.09	1989
1990	212,994	0	3.58	2.90	6.48	13,802	0	5,192	8,610	6,860	15,680	0	196,000	0	4.4%	13,802	6.48	1990
1991	219,067	0	3.58	3.00	6.58	14,415	0	5,400	9,015	6,860	15,680	0	196,000	0	4.6%	14,415	6.58	1991
1992	226,907	0	3.58	3.10	6.68	15,157	0	5,615	9,542	6,860	15,680	0	196,000	0	4.9%	15,157	6.68	1992
1993	236,183	0	3.58	3.20	6.78	16,013	0	5,840	10,173	6,860	15,680	0	196,000	0	5.2%	16,013	6.78	1993
1994	245,873	0	3.58	3.30	6.88	16,917	0	6,074	10,844	6,860	15,680	0	196,000	0	5.5%	16,917	6.88	1994
1995	255,439	0	3.58	3.40	6.98	17,830	0	6,317	11,513	6,860	15,680	0	196,000	0	5.9%	17,830	6.98	1995
1996	260,533	0	3.58	3.50	7.08	18,446	0	6,569	11,876	6,860	15,680	0	196,000	0	6.1%	18,446	7.08	1996
1997	265,897	0	3.58	3.60	7.18	19,091	0	6,832	12,259	6,860	15,680	0	196,000	0	6.3%	19,091	7.18	1997
1998	271,482	0	3.58	3.80	7.38	20,035	0	7,105	12,930	6,860	15,680	0	196,000	0	6.6%	20,035	7.38	1998
1999	277,343	0	3.58	3.90	7.48	20,745	0	7,390	13,356	6,860	15,680	0	196,000	0	6.8%	20,745	7.48	1999
2000	283,498	0	3.58	4.10	7.68	21,772	0	7,685	14,087	6,860	15,680	0	196,000	0	7.2%	21,772	7.68	2000
2001	288,220	0	3.58	4.30	7.88	22,712	0	7,993	14,719	6,860	15,680	0	196,000	0	7.5%	22,712	7.88	2001
2002	290,043	0	3.58	4.50	8.08	23,435	0	8,312	15,123	6,860	15,680	0	196,000	0	7.7%	23,435	8.08	2002
2003	291,926	0	3.58	4.70	8.28	24,171	0	8,645	15,527	6,860	15,680	0	196,000	0	7.9%	24,171	8.28	2003
2004	293,899	0	3.58	5.00	8.58	25,216	0	8,991	16,225	6,860	15,680	545	196,000	0	8.0%	25,216	8.58	2004
2005	295,935	0	3.58	5.30	8.88	26,279	0	9,350	16,929	6,860	15,680	1,249	195,455	0	8.0%	26,279	8.68	2005
2006	298,067	0	3.58	5.60	9.18	27,363	0	9,724	17,638	6,841	15,636	2,002	194,206	0	8.1%	27,363	9.18	2006
2007	300,290	0	3.58	5.90	9.48	28,467	0	10,113	18,354	6,797	15,536	2,818	192,204	0	8.1%	28,467	9.48	2007
2008	302,608	0	3.58	6.30	9.88	29,898	0	10,518	19,380	6,727	15,376	4,004	189,386	0	8.1%	29,898	9.88	2008
2009	305,023	0	3.58	6.60	10.18	31,051	0	10,938	20,113	6,629	15,151	4,962	185,383	0	8.2%	31,051	10.18	2009
2010	307,541	0	3.58	7.00	10.58	32,538	0	11,376	21,162	6,488	14,831	6,331	180,421	0	8.2%	32,538	10.58	2010
2011	310,165	0	3.58	7.40	10.98	34,056	0	11,831	22,225	6,315	14,434	7,791	174,089	0	8.3%	34,056	10.98	2011
2012	312,901	0	3.58	7.80	11.38	35,608	0	12,304	23,304	6,093	13,927	9,377	166,298	0	8.4%	35,608	11.38	2012
2013	315,753	0	3.58	8.30	11.88	37,511	0	12,796	24,715	5,820	13,304	11,411	156,921	0	8.5%	37,511	11.88	2013
2014	318,725	0	3.58	8.70	12.28	39,139	0	13,308	25,831	5,492	12,554	13,277	145,510	0	8.6%	39,139	12.28	2014
2015	321,824	0	3.58	9.20	12.78	41,129	0	13,841	27,289	5,093	11,641	15,648	132,232	0	8.8%	41,129	12.78	2015
2016	325,053	0	3.58	9.70	13.28	43,167	0	14,394	28,773	4,628	10,579	18,194	116,585	0	9.1%	43,167	13.28	2016
2017	328,420	0	3.58	10.09	13.67	44,888	0	14,970	29,918	4,080	9,327	20,592	98,390	0	9.5%	44,888	13.67	2017
2018	331,929	0	3.58	10.49	14.07	46,707	0	15,569	31,139	3,444	7,871	23,267	77,799	0	10.1%	46,707	14.07	2018
2019	335,587	0	3.58	10.91	14.49	48,631	0	16,192	32,439	2,723	6,274	26,215	54,531	0	11.4%	48,631	14.49	2019
2020	339,400	0	3.58	11.35	14.93	50,664	0	16,839	33,825	1,909	4,362	28,316	28,316	0	15.4%	50,664	14.93	2020
2021	343,375	0	3.58	11.80	15.38	52,816	0	17,513	35,304	991	0	0	0	0	ERR	17,513	5.10	2021
2022	347,518	0	3.58	12.27	15.85	55,094	0	18,213	36,881	0	0	0	0	0	ERR	18,213	5.24	2022
2023	351,836	0	3.58	12.76	16.34	57,506	0	18,942	38,564	0	0	0	0	0	ERR	18,942	5.38	2023
2024	356,338	0	3.58	13.28	16.86	60,061	0	19,699	40,362	0	0	0	0	0	ERR	19,699	5.53	2024
2025	361,030	0	3.58	13.81	17.39	62,769	0	20,487	42,282	0	0	0	0	0	ERR	20,487	5.67	2025
2026	365,921	0	3.58	14.36	17.94	65,640	0	21,307	44,333	0	0	0	0	0	ERR	21,307	5.82	2026
2027	371,019	0	3.58	14.93	18.51	68,686	0	22,159	46,526	0	0	0	0	0	ERR	22,159	5.97	2027
2028	376,334	0	3.58	15.53	19.11	71,917	0	23,046	48,872	0	0	0	0	0	ERR	23,046	6.12	2028
2029	378,607	0	3.58	16.15	19.73	74,704	0	23,967	50,736	0	0	0	0	0	ERR	23,967	6.33	2029
2030	378,607	0	3.58	16.80	20.38	77,150	0	24,926	52,224	0	0	0	0	0	ERR	24,926	6.58	2030
2031	378,607	0	3.58	17.47	21.05	79,694	0	25,923	53,770	0	0	0	0	0	ERR	25,923	6.85	2031
2032	378,607	0	3.58	18.17	21.75	82,339	0	26,960	55,379	0	0	0	0	0	ERR	26,960	7.12	2032
2033	378,607	0	3.58	18.89	22.47	85,091	0	28,038	57,052	0	0	0	0	0	ERR	28,038	7.41	2033
2034	378,607	0	3.58	19.65	23.23	87,952	0	29,160	58,792	0	0	0	0	0	ERR	29,160	7.70	2034
2035	378,607	0	3.58	20.44	24.02	90,928	0	30,326	60,602	0	0	0	0	0	ERR	30,326	8.01	2035
2036	378,607	0	3.58	21.25	24.83	94,023	0	31,539	62,483	0	0	0	0	0	ERR	31,539	8.33	2036
2037	378,607	0	3.58	22.10	25.68	97,242	0	32,801	64,441	0	0	0	0	0	ERR	32,801	8.66	2037
	16,027,515	0				2,193,639	0	741,877	1,451,752	217,270	494,353	196,000	6,011,726	7,820	6.1%	1,346,514		

Loan Principal (\$=000's)
O & M Inflation Rate
Rate of Return Floor
Rate of Return Ceiling

\$196,000
4.00%
3.50%
8.00%

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YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/MMH)	O & M RATE (CENTS/MMH)	TOTAL RATE (CENTS/MMH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)	ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/MMH)	YEAR
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1986	181,496	10,828	2.25	2.30	4.55	9,258	244	4,174	4,327	6,860	15,380	0	196,000	2,533	3.5%	8,952	4.93	1986
1987	191,437	21,656	2.53	2.80	5.33	10,204	548	4,341	6,410	6,860	15,680	0	196,000	450	3.5%	10,751	5.62	1987
1988	199,181	32,484	2.84	2.80	5.64	11,234	923	4,515	7,641	6,860	15,680	0	196,000	0	3.9%	12,156	6.10	1988
1989	206,042	43,312	3.19	2.90	6.09	12,548	1,382	4,696	9,234	6,860	15,680	0	196,000	0	4.7%	13,930	6.76	1989
1990	212,994	54,140	3.58	2.90	6.48	13,802	1,938	4,883	10,857	6,860	15,680	0	196,000	0	5.5%	15,740	7.39	1990
1991	219,067	54,140	3.58	3.00	6.58	14,415	1,938	5,079	11,274	6,860	15,680	0	196,000	0	5.8%	16,353	7.46	1991
1992	226,907	54,140	3.58	3.10	6.68	15,157	1,938	5,282	11,814	6,860	15,680	0	196,000	0	6.0%	17,096	7.53	1992
1993	236,183	54,140	3.58	3.20	6.78	16,013	1,938	5,493	12,458	6,860	15,680	0	196,000	0	6.4%	17,951	7.60	1993
1994	245,893	54,140	3.58	3.30	6.88	16,917	1,938	5,713	13,143	6,860	15,680	0	196,000	0	6.7%	18,856	7.67	1994
1995	255,439	54,140	3.58	3.40	6.98	17,830	1,938	5,941	13,826	6,860	15,680	0	196,000	0	7.1%	19,768	7.74	1995
1996	260,533	54,140	3.58	3.50	7.08	18,446	1,938	6,179	14,205	6,860	15,680	0	196,000	0	7.2%	20,384	7.82	1996
1997	265,897	54,140	3.58	3.60	7.18	19,091	1,938	6,426	14,603	6,860	15,680	0	196,000	0	7.5%	21,030	7.91	1997
1998	271,482	54,140	3.58	3.80	7.38	20,035	1,938	6,683	15,290	6,860	15,680	0	196,000	0	7.8%	21,974	8.09	1998
1999	277,343	54,140	3.58	3.90	7.48	20,745	1,938	6,951	15,733	6,860	15,680	53	196,000	0	8.0%	22,683	8.18	1999
2000	283,488	54,140	3.58	4.10	7.68	21,772	1,938	7,229	16,481	6,860	15,680	801	195,947	0	8.0%	23,710	8.36	2000
2001	288,220	54,140	3.58	4.30	7.88	22,712	1,938	7,518	17,132	6,858	15,676	1,456	195,146	0	8.0%	24,650	8.55	2001
2002	290,043	54,140	3.58	4.50	8.08	23,435	1,938	7,819	17,555	6,830	15,612	1,943	193,690	0	8.1%	25,374	8.75	2002
2003	291,926	54,140	3.58	4.70	8.28	24,171	1,938	8,131	17,978	6,779	15,495	2,483	191,746	0	8.1%	26,110	8.94	2003
2004	293,889	54,140	3.58	5.00	8.58	25,216	1,938	8,457	18,697	6,711	15,340	3,358	189,263	0	8.1%	27,154	9.24	2004
2005	295,935	54,140	3.58	5.30	8.88	26,279	1,938	8,795	19,422	6,624	15,141	4,281	185,905	0	8.1%	28,217	9.53	2005
2006	298,067	54,140	3.58	5.60	9.18	27,363	1,938	9,147	20,154	6,507	14,872	5,282	181,624	0	8.2%	29,301	9.83	2006
2007	300,290	54,140	3.58	5.90	9.48	28,467	1,938	9,513	20,893	6,357	14,530	6,363	176,342	0	8.2%	30,406	10.13	2007
2008	302,608	54,140	3.58	6.30	9.88	29,898	1,938	9,893	21,943	6,172	14,107	7,835	169,979	0	8.3%	31,836	10.52	2008
2009	305,023	54,140	3.58	6.60	10.18	31,051	1,938	10,289	22,701	5,949	13,598	9,103	162,144	0	8.4%	32,990	10.82	2009
2010	307,541	54,140	3.58	7.00	10.58	32,538	1,938	10,700	23,776	5,675	12,971	10,804	153,041	0	8.5%	34,476	11.21	2010
2011	310,165	54,140	3.58	7.40	10.98	34,056	1,938	11,128	24,866	5,356	12,243	12,623	142,237	0	8.6%	35,994	11.60	2011
2012	312,901	54,140	3.58	7.80	11.38	35,608	1,938	11,573	25,973	4,978	11,379	14,594	129,614	0	8.8%	37,546	12.00	2012
2013	315,753	54,140	3.58	8.30	11.88	37,511	1,938	12,036	27,413	4,536	10,369	17,044	115,020	0	9.0%	39,450	12.49	2013
2014	318,725	54,140	3.58	8.70	12.28	39,139	1,938	12,518	28,560	4,026	9,202	19,358	97,976	0	9.4%	41,078	12.89	2014
2015	321,824	54,140	3.58	9.20	12.78	41,129	1,938	13,019	30,049	3,429	7,838	22,211	78,618	0	10.0%	43,067	13.38	2015
2016	325,053	53,554	3.58	9.70	13.28	43,167	1,917	13,539	31,545	2,752	6,289	25,256	56,407	0	11.2%	45,084	13.87	2016
2017	328,420	50,187	3.58	10.09	13.67	44,888	1,797	14,081	32,604	1,974	4,513	28,092	31,151	0	14.5%	46,685	14.22	2017
2018	331,929	46,678	3.58	10.49	14.07	46,707	1,671	14,644	33,734	1,090	2,492	3,059	3,059	0	81.5%	48,379	14.57	2018
2019	335,587	43,020	3.58	10.91	14.49	48,631	1,540	15,230	34,941	107	0	0	0	0	ERR	15,230	4.54	2019
2020	339,400	39,207	3.58	11.35	14.93	50,664	1,404	15,839	36,229	0	0	0	0	0	ERR	15,839	4.67	2020
2021	343,375	35,232	3.58	11.80	15.38	52,816	1,261	16,473	37,605	0	0	0	0	0	ERR	16,473	4.80	2021
2022	347,518	31,089	3.58	12.27	15.85	55,094	1,113	17,131	39,076	0	0	0	0	0	ERR	17,131	4.93	2022
2023	351,836	26,771	3.58	12.76	16.34	57,506	958	17,817	40,648	0	0	0	0	0	ERR	17,817	5.06	2023
2024	356,338	22,269	3.58	13.28	16.86	60,061	797	18,529	42,329	0	0	0	0	0	ERR	18,529	5.20	2024
2025	361,030	17,577	3.58	13.81	17.39	62,769	629	19,271	44,128	0	0	0	0	0	ERR	19,271	5.34	2025
2026	365,921	12,686	3.58	14.36	17.94	65,640	454	20,041	46,053	0	0	0	0	0	ERR	20,041	5.48	2026
2027	371,019	7,588	3.58	14.93	18.51	68,686	272	20,843	48,114	0	0	0	0	0	ERR	20,843	5.62	2027
2028	376,334	2,273	3.58	15.53	19.11	71,917	81	21,677	50,322	0	0	0	0	0	ERR	21,677	5.76	2028
2029	378,607	0	3.58	16.15	19.73	74,704	0	22,544	52,160	0	0	0	0	0	ERR	22,544	5.95	2029
2030	378,607	0	3.58	16.80	20.38	77,150	0	23,446	53,704	0	0	0	0	0	ERR	23,446	6.19	2030
2031	378,607	0	3.58	17.47	21.05	79,694	0	24,383	55,310	0	0	0	0	0	ERR	24,383	6.44	2031
2032	378,607	0	3.58	18.17	21.75	82,339	0	25,359	56,980	0	0	0	0	0	ERR	25,359	6.70	2032
2033	378,607	0	3.58	18.89	22.47	85,091	0	26,373	58,717	0	0	0	0	0	ERR	26,373	6.97	2033
2034	378,607	0	3.58	19.65	23.23	87,952	0	27,428	60,524	0	0	0	0	0	ERR	27,428	7.24	2034
2035	378,607	0	3.58	20.44	24.02	90,928	0	28,525	62,403	0	0	0	0	0	ERR	28,525	7.53	2035
2036	378,607	0	3.53	21.25	24.83	94,023	0	29,666	64,357	0	0	0	0	0	ERR	29,666	7.84	2036
2037	378,607	0	3.58	22.10	25.68	97,242	0	30,853	66,389	0	0	0	0	0	ERR	30,853	8.15	2037
	16,027,515	1,904,051				2,192,711	67,384	497,814	1,562,282	195,612	446,868	196,000	5,392,908	2,983	6.6%	1,310,557		

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 4.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%

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YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/MMH)	O & M RATE (CENTS/MMH)	TOTAL RATE (CENTS/MMH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	OSM EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)	ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/MMH)	YEAR
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1986	181,496	10,828	2.64	2.30	4.94	8,966	286	4,174	5,077	6,860	15,680	0	196,000	1,783	3.52	9,467	5.22	1986
1987	191,437	21,656	2.64	2.80	5.44	10,414	572	4,341	6,645	6,860	15,680	0	194,000	215	3.52	10,986	5.74	1987
1988	199,181	32,484	2.84	2.80	5.64	11,234	923	4,515	7,641	6,860	15,680	0	196,000	0	3.92	12,156	6.10	1988
1989	206,042	43,312	3.19	2.90	6.09	12,548	1,382	4,696	9,234	6,860	15,680	0	196,000	0	4.72	13,930	6.76	1989
1990	212,994	54,140	3.58	2.90	6.48	13,802	1,938	4,883	10,857	6,860	15,680	0	196,000	0	5.52	15,740	7.39	1990
1991	219,067	54,140	3.58	3.00	6.58	14,415	1,938	5,079	11,274	6,860	15,680	0	196,000	0	5.82	16,553	7.46	1991
1992	226,907	54,140	3.58	3.10	6.68	15,157	1,938	5,282	11,814	6,860	15,680	0	196,000	0	6.02	17,096	7.53	1992
1993	236,183	54,140	3.58	3.20	6.78	16,013	1,938	5,493	12,458	6,860	15,680	0	196,000	0	6.42	17,951	7.60	1993
1994	245,893	54,140	3.58	3.30	6.88	16,917	1,938	5,713	13,143	6,860	15,680	0	196,000	0	6.72	18,856	7.67	1994
1995	255,439	54,140	3.58	3.40	6.98	17,830	1,938	5,941	13,826	6,860	15,680	0	196,000	0	7.12	19,768	7.74	1995
1996	260,533	54,140	3.58	3.50	7.08	18,446	1,938	6,179	14,205	6,860	15,680	0	196,000	0	7.22	20,384	7.82	1996
1997	265,897	54,140	3.58	3.60	7.18	19,091	1,938	6,426	14,603	6,860	15,680	0	196,000	0	7.52	21,030	7.91	1997
1998	271,482	54,140	3.58	3.80	7.38	20,035	1,938	6,683	15,290	6,860	15,680	0	196,000	0	7.82	21,974	8.09	1998
1999	277,343	54,140	3.58	3.90	7.48	20,745	1,938	6,951	15,733	6,860	15,680	53	196,000	0	8.02	22,683	8.18	1999
2000	283,488	54,140	3.58	4.10	7.68	21,772	1,938	7,229	16,481	6,860	15,680	801	195,947	0	8.02	23,710	8.36	2000
2001	288,220	54,140	3.58	4.30	7.88	22,712	1,938	7,518	17,132	6,858	15,676	1,456	195,146	0	8.02	24,650	8.55	2001
2002	290,043	54,140	3.58	4.50	8.08	23,435	1,938	7,819	17,555	6,830	15,612	1,943	193,690	0	8.12	25,374	8.75	2002
2003	291,926	54,140	3.58	4.70	8.28	24,171	1,938	8,131	17,978	6,779	15,495	2,483	191,746	0	8.12	26,110	8.94	2003
2004	293,889	54,140	3.58	5.00	8.58	25,216	1,938	8,457	18,697	6,711	15,340	3,358	189,263	0	8.12	27,154	9.24	2004
2005	295,935	54,140	3.58	5.30	8.88	26,279	1,938	8,795	19,422	6,624	15,141	4,281	185,905	0	8.12	28,217	9.53	2005
2006	298,067	54,140	3.58	5.60	9.18	27,363	1,938	9,147	20,154	6,507	14,872	5,282	181,624	0	8.22	29,301	9.83	2006
2007	300,290	54,140	3.58	5.90	9.48	28,467	1,938	9,513	20,893	6,357	14,530	6,363	176,342	0	8.22	30,406	10.13	2007
2008	302,608	54,140	3.58	6.30	9.88	29,898	1,938	9,893	21,943	6,172	14,107	7,835	169,979	0	8.32	31,836	10.52	2008
2009	305,023	54,140	3.58	6.60	10.18	31,051	1,938	10,289	22,701	5,949	13,598	9,103	162,144	0	8.42	32,990	10.82	2009
2010	307,541	54,140	3.58	7.00	10.58	32,538	1,938	10,700	23,776	5,675	12,971	10,804	153,041	0	8.52	34,476	11.21	2010
2011	310,165	54,140	3.58	7.40	10.98	34,056	1,938	11,128	24,866	5,356	12,243	12,623	142,237	0	8.62	35,994	11.60	2011
2012	312,901	54,140	3.58	7.80	11.38	35,608	1,938	11,573	25,973	4,978	11,379	14,594	129,614	0	8.82	37,546	12.00	2012
2013	315,753	54,140	3.58	8.30	11.88	37,511	1,938	12,036	27,413	4,536	10,369	17,044	115,020	0	9.02	39,450	12.49	2013
2014	318,725	54,140	3.58	8.70	12.28	39,139	1,938	12,518	28,560	4,026	9,202	19,358	97,976	0	9.42	41,078	12.89	2014
2015	321,824	54,140	3.58	9.20	12.78	41,129	1,938	13,019	30,049	3,429	7,838	22,211	78,618	0	10.02	43,067	13.38	2015
2016	325,053	53,554	3.58	9.70	13.28	43,167	1,917	13,539	31,545	2,752	6,289	25,256	56,407	0	11.22	45,084	13.87	2016
2017	328,420	50,187	3.58	10.09	13.67	44,888	1,797	14,081	32,604	1,974	4,513	28,092	31,151	0	14.52	46,685	14.22	2017
2018	331,929	46,678	3.58	10.49	14.07	46,707	1,671	14,644	33,734	1,090	2,492	3,059	3,059	0	91.52	48,379	14.57	2018
2019	335,587	43,020	3.58	10.91	14.49	48,631	1,540	15,230	34,941	107	0	0	0	0	ERR	15,230	4.54	2019
2020	339,400	39,207	3.58	11.35	14.93	50,664	1,404	15,839	36,229	0	0	0	0	0	ERR	15,839	4.67	2020
2021	343,375	35,232	3.58	11.80	15.38	52,816	1,261	16,473	37,605	0	0	0	0	0	ERR	16,473	4.80	2021
2022	347,518	31,089	3.58	12.27	15.85	55,094	1,113	17,131	39,076	0	0	0	0	0	ERR	17,131	4.93	2022
2023	351,836	26,771	3.58	12.76	16.34	57,506	958	17,817	40,648	0	0	0	0	0	ERR	17,817	5.06	2023
2024	356,338	22,269	3.58	13.28	16.86	60,061	797	18,529	42,329	0	0	0	0	0	ERR	18,529	5.20	2024
2025	361,030	17,577	3.58	13.81	17.39	62,769	629	19,271	44,128	0	0	0	0	0	ERR	19,271	5.34	2025
2026	365,921	12,686	3.58	14.36	17.94	65,640	454	20,041	46,053	0	0	0	0	0	ERR	20,041	5.48	2026
2027	371,019	7,588	3.58	14.93	18.51	68,686	272	20,843	48,114	0	0	0	0	0	ERR	20,843	5.62	2027
2028	376,334	2,273	3.58	15.53	19.11	71,917	91	21,677	50,322	0	0	0	0	0	ERR	21,677	5.76	2028
2029	378,607	0	3.58	16.15	19.73	74,704	0	22,544	52,160	0	0	0	0	0	ERR	22,544	5.95	2029
2030	378,607	0	3.58	16.80	20.38	77,150	0	23,446	53,704	0	0	0	0	0	ERR	23,446	6.19	2030
2031	378,607	0	3.58	17.47	21.05	79,694	0	24,383	55,310	0	0	0	0	0	ERR	24,383	6.44	2031
2032	378,607	0	3.58	18.17	21.75	82,339	0	25,359	56,980	0	0	0	0	0	ERR	25,359	6.70	2032
2033	378,607	0	3.58	18.89	22.47	85,091	0	26,373	58,717	0	0	0	0	0	ERR	26,373	6.97	2033
2034	378,607	0	3.58	19.65	23.23	87,952	0	27,428	60,524	0	0	0	0	0	ERR	27,428	7.24	2034
2035	378,607	0	3.58	20.44	24.02	90,928	0	28,525	62,403	0	0	0	0	0	ERR	28,525	7.51	2035
2036	378,607	0	3.58	21.25	24.83	94,023	0	29,666	64,357	0	0	0	0	0	ERR	29,666	7.84	2036
2037	378,607	0	3.58	22.10	25.68	97,242	0	30,853	66,389	0	0	0	0	0	ERR	30,853	8.15	2037
	16,027,515	1,904,051				2,193,629	67,450	697,814	1,563,266	195,612	446,868	196,000	5,392,908	1,998	6.72	1,311,397		

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 4.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%
 Change in Base Load Forecast 10.00%

4

YEAR	SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/MMH)	O & M RATE (CENTS/MMH)	TOTAL RATE (CENTS/MMH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)
A	B	C	D	E	F	G	H	I	J	K	L
1986	199,646	10,828	2.64	2.30	4.94	9,862	286	4,438	5,710	6,860	15,680
1987	210,581	21,656	2.64	2.80	5.44	11,456	572	4,616	7,412	6,860	15,680
1988	219,099	32,484	2.84	2.80	5.64	12,357	923	4,800	8,480	6,860	15,680
1989	226,646	42,312	3.19	2.90	6.09	13,803	1,350	4,992	10,160	6,860	15,680
1990	234,293	54,140	3.58	2.90	6.48	15,182	1,938	5,192	11,929	6,860	15,680
1991	240,974	54,140	3.58	3.00	6.58	15,856	1,938	5,400	12,395	6,860	15,680
1992	249,598	54,140	3.58	3.10	6.68	16,673	1,938	5,615	12,996	6,860	15,680
1993	259,801	54,140	3.58	3.20	6.78	17,615	1,938	5,840	13,713	6,860	15,680
1994	270,482	54,140	3.58	3.30	6.88	18,609	1,938	6,074	14,474	6,860	15,680
1995	280,983	54,140	3.58	3.40	6.98	19,613	1,938	6,317	15,234	6,860	15,680
1996	286,586	54,140	3.58	3.50	7.08	20,290	1,938	6,569	15,659	6,860	15,680
1997	292,487	54,140	3.58	3.60	7.18	21,001	1,938	6,832	16,107	6,860	15,680
1998	298,630	54,140	3.58	3.80	7.38	22,039	1,938	7,105	16,872	6,860	15,680
1999	305,077	54,140	3.58	3.90	7.48	22,820	1,938	7,390	17,368	6,845	15,646
2000	311,837	54,140	3.58	4.10	7.68	23,949	1,938	7,685	18,202	6,803	15,551
2001	317,042	54,140	3.58	4.30	7.88	24,983	1,938	7,993	18,929	6,743	15,413
2002	319,047	54,140	3.58	4.50	8.08	25,779	1,938	8,312	19,405	6,650	15,201
2003	321,119	54,140	3.58	4.70	8.28	26,589	1,938	8,645	19,882	6,527	14,919
2004	323,278	54,140	3.58	5.00	8.58	27,737	1,938	8,991	20,685	6,380	14,583
2005	325,529	53,079	3.58	5.30	8.88	28,907	1,900	9,350	21,457	6,206	14,186
2006	327,874	50,733	3.58	5.60	9.18	30,099	1,816	9,724	22,191	5,993	13,698
2007	330,319	48,288	3.58	5.90	9.48	31,314	1,729	10,113	22,930	5,738	13,116
2008	332,869	45,738	3.58	6.30	9.88	32,887	1,637	10,518	24,007	5,441	12,437
2009	335,525	43,082	3.58	6.60	10.18	34,156	1,542	10,938	24,760	5,098	11,652
2010	338,295	40,312	3.58	7.00	10.58	35,792	1,443	11,376	25,859	4,693	10,726
2011	341,182	37,426	3.58	7.40	10.98	37,462	1,340	11,831	26,971	4,234	9,677
2012	344,191	34,416	3.58	7.80	11.38	39,169	1,232	12,304	28,097	3,704	8,467
2013	347,328	31,279	3.58	8.30	11.88	41,263	1,120	12,796	29,586	3,099	7,083
2014	350,598	28,010	3.58	8.70	12.28	43,053	1,003	13,308	30,748	2,412	5,513
2015	354,006	24,601	3.58	9.20	12.78	45,242	881	13,841	32,282	1,624	3,713
2016	357,558	21,049	3.58	9.70	13.28	47,484	754	14,394	33,843	741	0
2017	361,262	17,345	3.58	10.09	13.67	49,377	621	14,970	35,028	0	0
2018	365,122	13,485	3.58	10.49	14.07	51,378	483	15,569	36,292	0	0
2019	369,146	9,461	3.58	10.91	14.49	53,494	339	16,192	37,641	0	0
2020	373,340	5,267	3.58	11.35	14.93	55,731	189	16,839	39,080	0	0
2021	377,713	895	3.58	11.80	15.38	58,098	32	17,513	40,617	0	0
2022	378,607	0	3.58	12.27	15.85	60,023	0	18,213	41,810	0	0
2023	378,607	0	3.58	12.76	16.34	61,882	0	18,942	42,940	0	0
2024	378,607	0	3.58	13.28	16.86	63,815	0	19,699	44,115	0	0
2025	378,607	0	3.58	13.81	17.39	65,825	0	20,487	45,338	0	0
2026	378,607	0	3.58	14.36	17.94	67,916	0	21,307	46,609	0	0
2027	378,607	0	3.58	14.93	18.51	70,090	0	22,159	47,931	0	0
2028	378,607	0	3.58	15.53	19.11	72,352	0	23,046	49,306	0	0
2029	378,607	0	3.58	16.15	19.73	74,704	0	23,967	50,736	0	0
2030	378,607	0	3.58	16.80	20.38	77,150	0	24,926	52,224	0	0
2031	378,607	0	3.58	17.47	21.05	79,694	0	25,923	53,770	0	0
2032	378,607	0	3.58	18.17	21.75	82,339	0	26,960	55,379	0	0
2033	378,607	0	3.58	18.89	22.47	85,091	0	28,038	57,052	0	0
2034	378,607	0	3.58	19.65	23.23	87,952	0	29,160	58,797	0	0
2035	378,607	0	3.58	20.44	24.02	90,928	0	30,326	60,602	0	0
2036	378,607	0	3.58	21.25	24.83	94,023	0	31,539	62,483	0	0
2037	378,607	0	3.58	22.10	25.68	97,242	0	32,801	64,441	0	0

ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/KWH)	YEAR
M	N	O	P	Q	R	S
0	196,000	1,150	3.52	10,148	5.08	1986
0	196,000	0	3.82	12,027	5.71	1987
0	196,000	0	4.32	13,280	6.06	1988
0	196,000	0	5.22	15,153	6.69	1989
0	196,000	0	6.12	17,120	7.31	1990
0	196,000	0	6.32	17,794	7.38	1991
0	196,000	0	6.62	18,611	7.46	1992
0	196,000	0	7.02	19,553	7.53	1993
0	196,000	0	7.42	20,547	7.60	1994
0	196,000	0	7.82	21,551	7.67	1995
0	196,000	0	8.02	22,229	7.76	1996
427	196,000	0	8.02	22,939	7.84	1997
1,192	195,573	0	8.02	23,977	8.03	1998
1,723	194,382	0	8.02	24,758	8.12	1999
2,652	192,659	0	8.12	25,887	8.30	2000
3,516	190,007	0	8.12	26,921	8.49	2001
4,204	186,492	0	8.22	27,717	8.69	2002
4,963	182,287	0	8.22	28,527	8.88	2003
6,102	177,325	0	8.22	29,675	9.18	2004
7,271	171,223	0	8.32	30,807	9.46	2005
8,493	163,952	0	8.42	31,915	9.73	2006
9,814	155,459	0	8.42	33,043	10.00	2007
11,570	145,645	0	8.52	34,525	10.37	2008
13,109	134,075	0	8.72	35,699	10.64	2009
15,133	120,966	0	8.92	37,235	11.01	2010
17,293	105,833	0	9.12	38,802	11.37	2011
19,630	88,540	0	9.62	40,401	11.74	2012
22,503	68,909	0	10.32	42,382	12.20	2013
25,235	46,407	0	11.92	44,056	12.57	2014
21,172	21,172	0	17.52	46,123	13.03	2015
0	0	0	ERR	14,394	4.03	2016
0	0	0	ERR	14,970	4.14	2017
0	0	0	ERR	15,569	4.26	2018
0	0	0	ERR	16,192	4.39	2019
0	0	0	ERR	16,839	4.51	2020
0	0	0	ERR	17,513	4.64	2021
0	0	0	ERR	18,213	4.81	2022
0	0	0	ERR	18,942	5.00	2023
0	0	0	ERR	19,699	5.20	2024
0	0	0	ERR	20,487	5.41	2025
0	0	0	ERR	21,307	5.63	2026
0	0	0	ERR	22,159	5.85	2027
0	0	0	ERR	23,046	6.09	2028
0	0	0	ERR	23,967	6.33	2029
0	0	0	ERR	24,926	6.58	2030
0	0	0	ERR	25,923	6.85	2031
0	0	0	ERR	26,960	7.12	2032
0	0	0	ERR	28,038	7.41	2033
0	0	0	ERR	29,160	7.70	2034
0	0	0	ERR	30,326	8.01	2035
0	0	0	ERR	31,539	8.33	2036
0	0	0	ERR	32,801	8.66	2037

17,156,774 1,423,843

2,312,141 50,263 741,877 1,620,527 178,112 405,419

196,000 4,892,904 1,150 6.52 1,306,375

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 4.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%
 Change in Base Load Forecast -10.00%

YEAR	FORECAST		DEBT SVC RATE (CENTS/KWH)	O & M RATE (CENTS/KWH)	TOTAL RATE (CENTS/KWH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)	ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/KWH)	YEAR
	SALES (MMH)	ADDITIONAL SALES (MMH)																
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1986	163,346	10,828	2.64	2.30	4.94	8,069	286	4,438	3,917	6,860	15,680	0	196,000	2,943	3.52	9,886	6.05	1986
1987	172,293	21,656	2.64	2.80	5.44	9,373	572	4,616	5,329	6,860	15,680	0	196,000	1,531	3.52	10,572	6.14	1987
1988	179,263	32,484	2.84	2.80	5.64	10,110	923	4,800	6,233	6,860	15,680	0	196,000	627	3.52	11,033	6.15	1988
1989	185,438	42,312	3.19	2.90	6.09	11,293	1,350	4,792	7,651	6,860	15,680	0	196,000	0	3.92	12,643	6.82	1989
1990	191,695	54,140	3.58	2.90	6.48	12,422	1,938	5,192	9,168	6,860	15,680	0	196,000	0	4.72	14,360	7.49	1990
1991	197,160	54,140	3.58	3.00	6.58	12,973	1,938	5,400	9,512	6,860	15,680	0	196,000	0	4.92	14,911	7.56	1991
1992	204,216	54,140	3.58	3.10	6.68	13,642	1,938	5,615	9,964	6,860	15,680	0	196,000	0	5.12	15,580	7.63	1992
1993	212,565	54,140	3.58	3.20	6.78	14,412	1,938	5,840	10,510	6,860	15,680	0	196,000	0	5.42	16,350	7.69	1993
1994	221,304	54,140	3.58	3.30	6.88	15,226	1,938	6,074	11,090	6,860	15,680	0	196,000	0	5.72	17,164	7.76	1994
1995	229,895	54,140	3.58	3.40	6.98	16,047	1,938	6,317	11,668	6,860	15,680	0	196,000	0	6.02	17,985	7.82	1995
1996	234,480	54,140	3.58	3.50	7.08	16,601	1,938	6,569	11,970	6,860	15,680	0	196,000	0	6.12	18,539	7.91	1996
1997	239,307	54,140	3.58	3.60	7.18	17,182	1,938	6,832	12,288	6,860	15,680	0	196,000	0	6.32	19,120	7.99	1997
1998	244,334	54,140	3.58	3.80	7.38	18,032	1,938	7,105	12,865	6,860	15,680	0	196,000	0	6.62	19,970	8.17	1998
1999	249,609	54,140	3.58	3.90	7.48	18,671	1,938	7,390	13,219	6,860	15,680	0	196,000	0	6.72	20,609	8.26	1999
2000	255,139	54,140	3.58	4.10	7.68	19,595	1,938	7,685	13,848	6,860	15,680	0	196,000	0	7.12	21,533	8.44	2000
2001	259,798	54,140	3.58	4.30	7.88	20,441	1,938	7,993	14,386	6,860	15,680	0	196,000	0	7.32	22,379	8.63	2001
2002	261,039	54,140	3.58	4.50	8.08	21,092	1,938	8,312	14,718	6,860	15,680	0	196,000	0	7.52	23,030	8.82	2002
2003	262,733	54,140	3.58	4.70	8.28	21,754	1,938	8,645	15,048	6,860	15,680	0	196,000	0	7.72	23,693	9.02	2003
2004	264,500	54,140	3.58	5.00	8.58	22,694	1,938	8,991	15,642	6,860	15,680	0	196,000	0	8.02	24,632	9.31	2004
2005	266,342	54,140	3.58	5.30	8.88	23,651	1,938	9,350	16,239	6,860	15,680	559	196,000	0	8.02	25,589	9.61	2005
2006	268,260	54,140	3.58	5.60	9.18	24,626	1,938	9,724	16,840	6,860	15,680	1,160	195,441	0	8.02	26,565	9.90	2006
2007	270,261	54,140	3.58	5.90	9.48	25,621	1,938	10,113	17,446	6,860	15,635	1,811	194,281	0	8.02	27,559	10.20	2007
2008	272,347	54,140	3.58	6.30	9.88	26,908	1,938	10,518	18,328	6,800	15,542	2,786	192,470	0	8.12	28,846	10.59	2008
2009	274,521	54,140	3.58	6.60	10.18	27,946	1,938	10,938	18,946	6,736	15,398	3,548	189,684	0	8.12	29,884	10.89	2009
2010	276,787	54,140	3.58	7.00	10.58	29,284	1,938	11,376	19,846	6,639	15,175	4,672	186,136	0	8.22	31,222	11.28	2010
2011	279,149	54,140	3.58	7.40	10.98	30,651	1,938	11,831	20,758	6,515	14,891	5,867	181,464	0	8.22	32,589	11.67	2011
2012	281,611	54,140	3.58	7.80	11.38	32,047	1,938	12,304	21,681	6,351	14,517	7,164	175,597	0	8.32	33,986	12.07	2012
2013	284,178	54,140	3.58	8.30	11.88	33,760	1,938	12,796	22,902	6,146	14,048	8,854	168,433	0	8.32	35,699	12.56	2013
2014	286,851	54,140	3.58	8.70	12.28	35,225	1,938	13,308	23,855	5,895	13,475	10,381	159,579	0	8.42	37,164	12.96	2014
2015	289,642	54,140	3.58	9.20	12.78	37,016	1,938	13,841	25,114	5,585	12,766	12,348	149,198	0	8.62	38,954	13.45	2015
2016	292,548	54,140	3.58	9.70	13.28	38,850	1,938	14,394	26,394	5,222	11,936	14,459	136,850	0	8.72	40,789	13.94	2016
2017	295,578	54,140	3.58	10.09	13.67	40,400	1,938	14,970	27,368	4,790	10,948	16,420	122,392	0	8.92	42,338	14.32	2017
2018	298,736	54,140	3.58	10.49	14.07	42,037	1,938	15,569	28,406	4,284	9,791	18,615	105,972	0	9.22	43,975	14.72	2018
2019	302,028	54,140	3.58	10.91	14.49	43,767	1,938	16,192	29,514	3,709	8,478	21,036	87,357	0	9.72	45,706	15.13	2019
2020	305,460	54,140	3.58	11.35	14.93	45,598	1,938	16,839	30,697	3,057	6,989	23,708	66,321	0	10.52	47,536	15.56	2020
2021	309,038	54,140	3.58	11.80	15.38	47,535	1,938	17,513	31,960	2,321	5,306	26,655	42,612	0	12.52	49,473	16.01	2021
2022	312,766	54,140	3.58	12.27	15.85	49,585	1,938	18,213	33,310	1,491	3,409	15,958	15,958	0	21.42	51,523	16.47	2022
2023	316,652	54,140	3.58	12.76	16.34	51,755	1,938	18,942	34,752	559	0	0	0	0	ERR	18,942	5.98	2023
2024	320,704	54,140	3.58	13.28	16.86	54,055	1,938	19,699	36,294	0	0	0	0	0	ERR	19,699	6.14	2024
2025	324,927	53,680	3.58	13.81	17.39	56,492	1,922	20,487	37,927	0	0	0	0	0	ERR	20,487	6.31	2025
2026	329,329	49,278	3.58	14.36	17.94	59,076	1,764	21,307	39,533	0	0	0	0	0	ERR	21,307	6.47	2026
2027	333,917	44,690	3.58	14.93	18.51	61,817	1,600	22,159	41,258	0	0	0	0	0	ERR	22,159	6.64	2027
2028	338,701	39,906	3.58	15.53	19.11	64,726	1,429	23,046	43,109	0	0	0	0	0	ERR	23,046	6.80	2028
2029	340,746	37,861	3.58	16.15	19.73	67,233	1,355	23,967	44,621	0	0	0	0	0	ERR	23,967	7.03	2029
2030	340,746	37,861	3.58	16.80	20.38	69,435	1,355	24,926	45,864	0	0	0	0	0	ERR	24,926	7.32	2030
2031	340,746	37,861	3.58	17.47	21.05	71,724	1,355	25,923	47,156	0	0	0	0	0	ERR	25,923	7.61	2031
2032	340,746	37,861	3.58	18.17	21.75	74,105	1,355	26,960	48,501	0	0	0	0	0	ERR	26,960	7.91	2032
2033	340,746	37,861	3.58	18.89	22.47	76,581	1,355	28,038	49,898	0	0	0	0	0	ERR	28,038	8.23	2033
2034	340,746	37,861	3.58	19.65	23.23	79,157	1,355	29,160	51,352	0	0	0	0	0	ERR	29,160	8.56	2034
2035	340,746	37,861	3.58	20.44	24.02	81,835	1,355	30,326	52,864	0	0	0	0	0	ERR	30,326	8.90	2035
2036	340,746	37,861	3.58	21.25	24.83	84,621	1,355	31,539	54,437	0	0	0	0	0	ERR	31,539	9.26	2036
2037	340,746	37,861	3.58	22.10	25.68	87,517	1,355	32,801	56,072	0	0	0	0	0	ERR	32,801	9.67	2037
	14,424,764	2,530,481				1,974,266	89,880	741,877	1,322,270	227,001	517,583	196,000	6,289,744	5,101	6.32	1,382,667		

Loan Principal (\$=000's) \$194,000
 O & M Inflation Rate 4.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%
 Change in Base Load Forecast 10.00%

YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/MMH)	O & M RATE (CENTS/MMH)	TOTAL RATE (CENTS/MMH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)
1986	179,646	0	2.64	2.30	4.94	9,862	0	4,438	5,424	6,860	15,680
1987	210,591	0	2.64	2.80	5.44	11,456	0	4,616	6,840	6,860	15,680
1988	219,099	0	2.84	2.80	5.64	12,357	0	4,800	7,557	6,860	15,680
1989	226,646	0	3.19	2.90	6.09	13,803	0	4,992	8,811	6,860	15,680
1990	234,293	0	3.58	2.90	6.48	15,182	0	5,192	9,990	6,860	15,680
1991	240,974	0	3.58	3.00	6.58	15,856	0	5,400	10,457	6,860	15,680
1992	249,598	0	3.58	3.10	6.68	16,673	0	5,615	11,058	6,860	15,680
1993	259,801	0	3.58	3.20	6.78	17,615	0	5,840	11,774	6,860	15,680
1994	270,482	0	3.58	3.30	6.88	18,609	0	6,074	12,535	6,860	15,680
1995	280,983	0	3.58	3.40	6.98	19,613	0	6,317	13,296	6,860	15,680
1996	286,586	0	3.58	3.50	7.08	20,290	0	6,569	13,721	6,860	15,680
1997	292,487	0	3.58	3.60	7.18	21,001	0	6,832	14,168	6,860	15,680
1998	298,630	0	3.58	3.80	7.38	22,039	0	7,105	14,934	6,860	15,680
1999	305,077	0	3.58	3.90	7.48	22,820	0	7,390	15,430	6,860	15,680
2000	311,837	0	3.58	4.10	7.68	23,949	0	7,685	16,264	6,860	15,680
2001	317,042	0	3.58	4.30	7.88	24,983	0	7,993	16,990	6,860	15,680
2002	319,047	0	3.58	4.50	8.08	25,779	0	8,312	17,467	6,840	15,633
2003	321,119	0	3.58	4.70	8.28	26,589	0	8,645	17,944	6,794	15,528
2004	323,278	0	3.58	5.00	8.58	27,737	0	8,991	18,747	6,730	15,382
2005	325,529	0	3.58	5.30	8.88	28,907	0	9,350	19,557	6,645	15,189
2006	327,874	0	3.58	5.60	9.18	30,099	0	9,724	20,375	6,527	14,919
2007	330,319	0	3.58	5.90	9.48	31,314	0	10,113	21,201	6,374	14,570
2008	332,869	0	3.58	6.30	9.88	32,887	0	10,518	22,370	6,183	14,133
2009	335,525	0	3.58	6.60	10.18	34,156	0	10,938	23,218	5,951	13,603
2010	338,295	0	3.58	7.00	10.58	35,792	0	11,376	24,416	5,663	12,944
2011	341,182	0	3.58	7.40	10.98	37,462	0	11,831	25,631	5,327	12,175
2012	344,191	0	3.58	7.80	11.38	39,169	0	12,304	26,865	4,925	11,257
2013	347,328	0	3.58	8.30	11.88	41,263	0	12,796	28,466	4,454	10,181
2014	350,598	0	3.58	8.70	12.28	43,053	0	13,308	29,745	3,908	8,932
2015	354,006	0	3.58	9.20	12.78	45,242	0	13,841	31,401	3,268	7,469
2016	357,558	0	3.58	9.70	13.28	47,484	0	14,394	33,090	2,539	5,804
2017	361,262	0	3.58	10.09	13.67	49,377	0	14,970	34,407	1,702	3,890
2018	365,122	0	3.58	10.49	14.07	51,378	0	15,569	35,809	747	0
2019	369,146	0	3.58	10.91	14.49	53,494	0	16,192	37,302	0	0
2020	373,340	0	3.58	11.35	14.93	55,731	0	16,839	38,892	0	0
2021	377,713	0	3.58	11.80	15.38	58,098	0	17,513	40,585	0	0
2022	378,607	0	3.58	12.27	15.85	60,023	0	18,213	41,810	0	0
2023	378,607	0	3.58	12.76	16.34	61,882	0	18,942	42,940	0	0
2024	378,607	0	3.58	13.28	16.86	63,815	0	19,699	44,115	0	0
2025	378,607	0	3.58	13.81	17.39	65,825	0	20,487	45,338	0	0
2026	378,607	0	3.58	14.36	17.94	67,916	0	21,307	46,609	0	0
2027	378,607	0	3.58	14.93	18.51	70,090	0	22,159	47,931	0	0
2028	378,607	0	3.58	15.53	19.11	72,352	0	23,046	49,306	0	0
2029	378,607	0	3.58	16.15	19.73	74,704	0	23,967	50,736	0	0
2030	378,607	0	3.58	16.80	20.38	77,150	0	24,926	52,224	0	0
2031	378,607	0	3.58	17.47	21.05	79,694	0	25,923	53,770	0	0
2032	378,607	0	3.58	18.17	21.75	82,339	0	26,960	55,379	0	0
2033	378,607	0	3.58	18.89	22.47	85,091	0	28,038	57,052	0	0
2034	378,607	0	3.58	19.65	23.23	87,952	0	29,160	58,792	0	0
2035	378,607	0	3.58	20.44	24.02	90,928	0	30,326	60,602	0	0
2036	378,607	0	3.58	21.25	24.83	94,023	0	31,539	62,483	0	0
2037	378,607	0	3.58	22.10	25.68	97,242	0	32,801	64,441	0	0

17,156,774 0 2,312,141 0 741,877 1,570,264 194,336 442,490

ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/MMH)	YEAR
N	N	O	P	O	R	S
0	194,000	1,436	3.5%	9,882	4.95	1986
0	196,000	20	3.5%	11,456	5.44	1987
0	196,000	0	3.9%	12,357	5.64	1988
0	196,000	0	4.5%	13,803	6.09	1989
0	196,000	0	5.1%	15,182	6.48	1990
0	196,000	0	5.7%	15,856	6.58	1991
0	196,000	0	5.6%	16,673	6.68	1992
0	196,000	0	6.0%	17,615	6.78	1993
0	196,000	0	6.4%	18,609	6.88	1994
0	196,000	0	6.8%	19,613	6.98	1995
0	196,000	0	7.0%	20,290	7.08	1996
0	196,000	0	7.2%	21,001	7.18	1997
0	196,000	0	7.6%	22,039	7.38	1998
0	196,000	0	7.9%	22,820	7.48	1999
584	196,000	0	8.0%	23,949	7.68	2000
1,310	195,416	0	8.0%	24,983	7.88	2001
1,833	194,106	0	8.1%	25,779	8.08	2002
2,415	192,272	0	8.1%	26,589	8.28	2003
3,365	189,857	0	8.1%	27,737	8.58	2004
4,368	186,492	0	8.1%	28,907	8.88	2005
5,455	182,124	0	8.2%	30,099	9.18	2006
6,631	176,669	0	8.2%	31,314	9.48	2007
8,236	170,038	0	8.3%	32,887	9.88	2008
9,615	161,801	0	8.4%	34,156	10.18	2009
11,472	152,186	0	8.5%	35,792	10.58	2010
13,456	140,715	0	8.7%	37,462	10.98	2011
15,608	127,259	0	8.8%	39,169	11.38	2012
18,286	111,651	0	9.1%	41,263	11.88	2013
20,813	93,366	0	9.6%	43,053	12.28	2014
23,932	72,553	0	10.3%	45,242	12.78	2015
27,285	48,621	0	11.9%	47,484	13.28	2016
21,335	21,335	0	18.2%	49,377	13.67	2017
0	0	0	ERR	15,569	4.26	2018
0	0	0	ERR	16,192	4.39	2019
0	0	0	ERR	16,839	4.51	2020
0	0	0	ERR	17,513	4.64	2021
0	0	0	ERR	18,213	4.81	2022
0	0	0	ERR	18,942	5.00	2023
0	0	0	ERR	19,699	5.20	2024
0	0	0	ERR	20,487	5.41	2025
0	0	0	ERR	21,307	5.63	2026
0	0	0	ERR	22,159	5.85	2027
0	0	0	ERR	23,046	6.09	2028
0	0	0	ERR	23,967	6.33	2029
0	0	0	ERR	24,926	6.58	2030
0	0	0	ERR	25,923	6.85	2031
0	0	0	ERR	26,960	7.12	2032
0	0	0	ERR	28,038	7.41	2033
0	0	0	ERR	29,160	7.70	2034
0	0	0	ERR	30,326	8.01	2035
0	0	0	ERR	31,539	8.33	2036
0	0	0	ERR	32,801	8.66	2037

196,000 5,158,460 1,455 6.4% 1,326,045

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 4.00Z
 Rate of Return Floor 3.50Z
 Rate of Return Ceiling 8.00Z
 Change in Base Load Forecast -10.00Z

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YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/KWH)	O & M RATE (CENTS/KWH)	TOTAL RATE (CENTS/KWH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O & M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)	ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/KWH)	YEAR
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1986	163,346	0	2.64	2.30	4.94	8,069	0	4,438	3,631	6,860	15,680	0	196,000	3,229	3.5Z	10,172	6.2Z	1986
1987	172,293	0	2.64	2.80	5.44	9,373	0	4,616	4,757	6,860	15,680	0	196,000	2,103	3.5Z	10,922	6.34	1987
1988	179,263	0	2.84	2.80	5.64	10,110	0	4,800	5,310	6,860	15,680	0	196,000	1,550	3.5Z	10,669	5.95	1988
1989	185,438	0	3.19	2.90	6.09	11,293	0	4,992	6,301	6,860	15,680	0	196,000	559	3.5Z	11,293	6.09	1989
1990	191,695	0	3.58	2.90	6.48	12,422	0	5,192	7,230	6,860	15,680	0	196,000	0	3.7Z	12,422	6.48	1990
1991	197,160	0	3.58	3.00	6.58	12,973	0	5,400	7,574	6,860	15,680	0	196,000	0	3.9Z	12,973	6.58	1991
1992	204,216	0	3.58	3.10	6.68	13,642	0	5,615	8,026	6,860	15,680	0	196,000	0	4.1Z	13,642	6.68	1992
1993	212,565	0	3.58	3.20	6.78	14,412	0	5,840	8,572	6,860	15,680	0	196,000	0	4.4Z	14,412	6.78	1993
1994	221,304	0	3.58	3.30	6.88	15,226	0	6,074	9,152	6,860	15,680	0	196,000	0	4.7Z	15,226	6.88	1994
1995	229,895	0	3.58	3.40	6.98	16,047	0	6,317	9,730	6,860	15,680	0	196,000	0	5.0Z	16,047	6.98	1995
1996	234,480	0	3.58	3.50	7.08	16,601	0	6,569	10,032	6,860	15,680	0	196,000	0	5.1Z	16,601	7.08	1996
1997	239,307	0	3.58	3.60	7.18	17,182	0	6,832	10,350	6,860	15,680	0	196,000	0	5.3Z	17,182	7.18	1997
1998	244,334	0	3.58	3.80	7.38	18,032	0	7,105	10,926	6,860	15,680	0	196,000	0	5.6Z	18,032	7.38	1998
1999	249,609	0	3.58	3.90	7.48	18,671	0	7,390	11,281	6,860	15,680	0	196,000	0	5.8Z	18,671	7.48	1999
2000	255,139	0	3.58	4.10	7.68	19,595	0	7,685	11,910	6,860	15,680	0	196,000	0	6.1Z	19,595	7.68	2000
2001	259,398	0	3.58	4.30	7.88	20,441	0	7,993	12,448	6,860	15,680	0	196,000	0	6.4Z	20,441	7.88	2001
2002	261,039	0	3.58	4.50	8.08	21,092	0	8,312	12,780	6,860	15,680	0	196,000	0	6.5Z	21,092	8.08	2002
2003	262,733	0	3.58	4.70	8.28	21,754	0	8,645	13,110	6,860	15,680	0	196,000	0	6.7Z	21,754	8.28	2003
2004	264,500	0	3.58	5.00	8.58	22,694	0	8,991	13,704	6,860	15,680	0	196,000	0	7.0Z	22,694	8.58	2004
2005	266,342	0	3.58	5.30	8.88	23,651	0	9,350	14,301	6,860	15,680	0	196,000	0	7.3Z	23,651	8.88	2005
2006	268,260	0	3.58	5.60	9.18	24,626	0	9,724	14,902	6,860	15,680	0	196,000	0	7.6Z	24,626	9.18	2006
2007	270,261	0	3.58	5.90	9.48	25,621	0	10,113	15,508	6,860	15,680	0	196,000	0	7.9Z	25,621	9.48	2007
2008	272,347	0	3.58	6.30	9.88	26,908	0	10,518	16,390	6,860	15,680	710	196,000	0	8.0Z	26,908	9.88	2008
2009	274,521	0	3.58	6.60	10.18	27,946	0	10,938	17,008	6,860	15,680	1,328	195,290	0	8.0Z	27,946	10.18	2009
2010	276,787	0	3.58	7.00	10.58	29,284	0	11,376	17,908	6,835	15,623	2,285	193,962	0	8.1Z	29,284	10.58	2010
2011	279,149	0	3.58	7.40	10.98	30,651	0	11,831	18,820	6,789	15,517	3,303	191,677	0	8.1Z	30,651	10.98	2011
2012	281,611	0	3.58	7.80	11.38	32,047	0	12,304	19,743	6,709	15,334	4,409	188,375	0	8.1Z	32,047	11.38	2012
2013	284,178	0	3.58	8.30	11.88	33,760	0	12,796	20,964	6,593	15,070	5,894	183,966	0	8.2Z	33,760	11.88	2013
2014	286,853	0	3.58	8.70	12.28	35,225	0	13,308	21,917	6,439	14,717	7,200	178,072	0	8.3Z	35,225	12.28	2014
2015	289,642	0	3.58	9.20	12.78	37,016	0	13,841	23,176	6,233	14,246	8,930	170,872	0	8.3Z	37,016	12.78	2015
2016	292,548	0	3.58	9.70	13.28	38,850	0	14,394	24,456	5,981	13,670	10,786	161,942	0	8.4Z	38,850	13.28	2016
2017	295,578	0	3.58	10.09	13.67	40,400	0	14,970	25,430	5,668	12,955	12,474	151,155	0	8.6Z	40,400	13.67	2017
2018	298,736	0	3.58	10.49	14.07	42,037	0	15,569	26,468	5,290	12,092	14,376	138,681	0	8.7Z	42,037	14.07	2018
2019	302,028	0	3.58	10.91	14.49	43,767	0	16,192	27,576	4,854	11,094	16,481	124,305	0	8.9Z	43,767	14.49	2019
2020	305,460	0	3.58	11.35	14.93	45,598	0	16,839	28,759	4,351	9,944	18,814	107,824	0	9.2Z	45,598	14.93	2020
2021	309,038	0	3.58	11.80	15.38	47,535	0	17,513	30,022	3,774	8,626	21,396	89,010	0	9.7Z	47,535	15.38	2021
2022	312,766	0	3.58	12.27	15.85	49,585	0	18,213	31,371	3,115	7,121	24,251	67,614	0	10.5Z	49,585	15.85	2022
2023	316,652	0	3.58	12.76	16.34	51,755	0	18,942	32,814	2,366	5,409	27,404	43,363	0	12.5Z	51,755	16.34	2023
2024	320,704	0	3.58	13.28	16.86	54,055	0	19,699	34,356	1,518	3,469	15,959	15,959	0	21.7Z	54,055	16.86	2024
2025	324,927	0	3.58	13.81	17.39	56,492	0	20,487	36,005	559	0	0	0	0	ERR	20,487	6.31	2025
2026	329,329	0	3.58	14.36	17.94	59,076	0	21,307	37,769	0	0	0	0	0	ERR	21,307	6.47	2026
2027	333,917	0	3.58	14.93	18.51	61,817	0	22,159	39,658	0	0	0	0	0	ERR	22,159	6.64	2027
2028	338,701	0	3.58	15.53	19.11	64,726	0	23,046	41,680	0	0	0	0	0	ERR	23,046	6.80	2028
2029	340,746	0	3.58	16.15	19.73	67,233	0	23,967	43,266	0	0	0	0	0	ERR	23,967	7.03	2029
2030	340,746	0	3.58	16.80	20.38	69,435	0	24,926	44,509	0	0	0	0	0	ERR	24,926	7.32	2030
2031	340,746	0	3.58	17.47	21.05	71,724	0	25,923	45,801	0	0	0	0	0	ERR	25,923	7.61	2031
2032	340,746	0	3.58	18.17	21.75	74,105	0	26,960	47,145	0	0	0	0	0	ERR	26,960	7.91	2032
2033	340,746	0	3.58	18.89	22.47	76,581	0	28,038	48,543	0	0	0	0	0	ERR	28,038	8.22	2033
2034	340,746	0	3.58	19.65	23.23	79,157	0	29,160	49,997	0	0	0	0	0	ERR	29,160	8.56	2034
2035	340,746	0	3.58	20.44	24.02	81,835	0	30,326	51,509	0	0	0	0	0	ERR	30,326	8.90	2035
2036	340,746	0	3.58	21.25	24.83	84,621	0	31,539	53,081	0	0	0	0	0	ERR	31,539	9.26	2036
2037	340,746	0	3.58	22.10	25.68	87,517	0	32,801	54,716	0	0	0	0	0	ERR	32,801	9.67	2037
14,424,764	0					1,974,266	0	741,877	1,232,389	241,712	551,208	196,000	6,710,065	7,440	6.0Z	1,384,799		

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 6.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%
 Change in Base Load Forecast 0.00%

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YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/KWH)	O & M RATE (CENTS/KWH)	TOTAL RATE (CENTS/KWH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)
A	B	C	D	E	F	G	H	I	J	K	L
1986	181,496	0	2.64	2.30	4.94	8,966	0	4,438	4,528	6,860	15,680
1987	191,437	0	2.64	2.80	5.44	10,414	0	4,704	5,710	6,860	15,680
1988	199,181	0	2.84	2.80	5.64	11,234	0	4,987	6,247	6,860	15,680
1989	206,042	0	3.19	2.90	6.09	12,548	0	5,286	7,262	6,860	15,680
1990	212,994	0	3.58	2.90	6.48	13,802	0	5,603	8,199	6,860	15,680
1991	219,067	0	3.58	3.00	6.58	14,415	0	5,939	8,476	6,860	15,680
1992	226,907	0	3.58	3.10	6.68	15,157	0	6,295	8,862	6,860	15,680
1993	236,183	0	3.58	3.20	6.78	16,013	0	6,673	9,340	6,860	15,680
1994	245,893	0	3.58	3.30	6.88	16,917	0	7,073	9,844	6,860	15,680
1995	255,439	0	3.58	3.40	6.98	17,830	0	7,498	10,332	6,860	15,680
1996	260,533	0	3.58	3.50	7.08	18,446	0	7,948	10,498	6,860	15,680
1997	265,897	0	3.58	3.60	7.18	19,091	0	8,425	10,667	6,860	15,680
1998	271,482	0	3.58	3.80	7.38	20,035	0	8,930	11,105	6,860	15,680
1999	277,343	0	3.58	3.90	7.48	20,745	0	9,466	11,279	6,860	15,680
2000	283,488	0	3.58	4.10	7.68	21,772	0	10,034	11,738	6,860	15,680
2001	288,220	0	3.58	4.30	7.88	22,712	0	10,636	12,076	6,860	15,680
2002	290,043	0	3.58	4.50	8.08	23,435	0	11,274	12,161	6,860	15,680
2003	291,926	0	3.58	4.70	8.28	24,171	0	11,951	12,221	6,860	15,680
2004	293,889	0	3.58	5.00	8.58	25,216	0	12,668	12,548	6,860	15,680
2005	295,935	0	3.58	5.30	8.88	26,279	0	13,428	12,851	6,860	15,680
2006	298,067	0	3.58	5.60	9.18	27,363	0	14,233	13,129	6,860	15,680
2007	300,290	0	3.58	5.90	9.48	28,467	0	15,087	13,380	6,860	15,680
2008	302,608	0	3.58	6.30	9.88	29,898	0	15,992	13,905	6,860	15,680
2009	305,023	0	3.58	6.60	10.18	31,051	0	16,952	14,099	6,860	15,680
2010	307,541	0	3.58	7.00	10.58	32,538	0	17,969	14,569	6,860	15,680
2011	310,165	0	3.58	7.40	10.98	34,056	0	19,047	15,009	6,860	15,680
2012	312,901	0	3.58	7.80	11.38	35,608	0	20,190	15,418	6,860	15,680
2013	315,753	0	3.58	8.30	11.88	37,511	0	21,402	16,110	6,860	15,680
2014	318,725	0	3.58	8.70	12.28	39,139	0	22,686	16,454	6,860	15,680
2015	321,824	0	3.58	9.20	12.78	41,129	0	24,047	17,082	6,845	15,646
2016	325,053	0	3.58	9.70	13.28	43,167	0	25,490	17,677	6,818	15,584
2017	328,420	0	3.58	10.09	13.67	44,888	0	27,019	17,869	6,768	15,469
2018	331,929	0	3.58	10.49	14.07	46,707	0	28,640	18,067	6,694	15,301
2019	335,587	0	3.58	10.91	14.49	48,631	0	30,359	18,272	6,610	15,109
2020	339,400	0	3.58	11.35	14.93	50,664	0	32,180	18,484	6,513	14,888
2021	343,375	0	3.58	11.80	15.38	52,816	0	34,111	18,705	6,403	14,635
2022	347,518	0	3.58	12.27	15.85	55,094	0	36,158	18,937	6,277	14,347
2023	351,836	0	3.58	12.76	16.34	57,506	0	38,327	19,179	6,134	14,022
2024	356,338	0	3.58	13.28	16.86	60,061	0	40,627	19,435	5,974	13,654
2025	361,030	0	3.58	13.81	17.39	62,769	0	43,064	19,705	5,793	13,242
2026	365,921	0	3.58	14.36	17.94	65,640	0	45,648	19,992	5,591	12,779
2027	371,019	0	3.58	14.93	18.51	68,686	0	48,387	20,299	5,365	12,262
2028	376,334	0	3.58	15.53	19.11	71,917	0	51,290	20,627	5,112	11,685
2029	378,607	0	3.58	16.15	19.73	74,704	0	54,368	20,336	4,831	11,042
2030	378,607	0	3.58	16.80	20.38	77,150	0	57,630	19,520	4,518	10,327
2031	378,607	0	3.58	17.47	21.05	79,694	0	61,087	18,606	4,193	9,584
2032	378,607	0	3.58	18.17	21.75	82,339	0	64,753	17,587	3,871	8,848
2033	378,607	0	3.58	18.89	22.47	85,091	0	68,638	16,453	3,555	8,126
2034	378,607	0	3.58	19.65	23.23	87,952	0	72,756	15,196	3,249	7,427
2035	378,607	0	3.58	20.44	24.02	90,928	0	77,121	13,807	2,958	6,761
2036	378,607	0	3.58	21.25	24.83	94,023	0	81,749	12,274	2,686	6,140
2037	378,607	0	3.58	22.10	25.68	97,242	0	86,654	10,588	2,439	5,576

ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/KWH)	YEAR
M	N	O	P	Q	R	S
0	196,000	2,332	3.5%	10,116	5.57	1986
0	196,000	1,150	3.5%	11,027	5.76	1987
0	196,000	613	3.5%	11,234	5.64	1988
0	196,000	0	3.7%	12,548	6.09	1989
0	196,000	0	4.2%	13,802	6.48	1990
0	196,000	0	4.3%	14,415	6.58	1991
0	196,000	0	4.5%	15,157	6.68	1992
0	196,000	0	4.8%	16,013	6.78	1993
0	196,000	0	5.0%	16,917	6.88	1994
0	196,000	0	5.3%	17,830	6.98	1995
0	196,000	0	5.4%	18,446	7.08	1996
0	196,000	0	5.4%	19,091	7.18	1997
0	196,000	0	5.7%	20,035	7.38	1998
0	196,000	0	5.8%	20,745	7.48	1999
0	196,000	0	6.0%	21,772	7.68	2000
0	196,000	0	6.2%	22,712	7.88	2001
0	196,000	0	6.2%	23,435	8.08	2002
0	196,000	0	6.2%	24,171	8.28	2003
0	196,000	0	6.4%	25,216	8.58	2004
0	196,000	0	6.6%	26,279	8.88	2005
0	196,000	0	6.7%	27,363	9.18	2006
0	196,000	0	6.8%	28,467	9.48	2007
0	196,000	0	7.1%	29,898	9.88	2008
0	196,000	0	7.2%	31,051	10.18	2009
0	196,000	0	7.4%	32,538	10.58	2010
0	196,000	0	7.7%	34,056	10.98	2011
0	196,000	0	7.9%	35,608	11.38	2012
430	196,000	0	8.0%	37,511	11.88	2013
774	195,570	0	8.0%	39,139	12.28	2014
1,417	194,796	0	8.0%	41,129	12.78	2015
2,094	193,360	0	8.1%	43,167	13.28	2016
2,401	191,266	0	8.1%	44,888	13.67	2017
2,766	188,865	0	8.1%	46,707	14.07	2018
3,163	186,099	0	8.1%	48,631	14.49	2019
3,596	182,936	0	8.1%	50,664	14.93	2020
4,071	179,340	0	8.2%	52,816	15.38	2021
4,589	175,269	0	8.2%	55,094	15.85	2022
5,157	170,680	0	8.2%	57,506	16.34	2023
5,780	165,523	0	8.2%	60,061	16.86	2024
6,463	159,742	0	8.3%	62,769	17.39	2025
7,213	153,279	0	8.3%	65,640	17.94	2026
8,036	146,066	0	8.4%	68,686	18.51	2027
8,942	138,030	0	8.5%	71,917	19.11	2028
9,294	129,088	0	8.6%	74,704	19.73	2029
9,193	119,794	0	8.6%	77,150	20.38	2030
9,023	110,601	0	8.7%	79,694	21.05	2031
8,738	101,578	0	8.7%	82,339	21.75	2032
8,327	92,840	0	8.8%	85,091	22.47	2033
7,769	84,513	0	8.8%	87,952	23.23	2034
7,045	76,745	0	8.8%	90,928	24.02	2035
6,135	69,699	0	8.8%	94,023	24.83	2036
5,012	63,564	0	8.8%	97,242	25.68	2037

16,027,515

2,193,629

0

1,456,913

736,716

318,129

727,175

137,448

8,951,246

4,095

5.4%

2,195,392

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 8.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%
 Change in Base Load Forecast 0.00%

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YEAR	FORECAST SALES (MWH)	ADDITIONAL SALES (MWH)	DEBT SVC RATE (CENTS/KWH)	O & M RATE (CENTS/KWH)	TOTAL RATE (CENTS/KWH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)
A	B	C	D	E	F	G	H	I	J	K	L
1986	181,496	0	2.64	2.30	4.94	8,966	0	4,438	4,528	6,860	15,680
1987	191,437	0	2.64	2.80	5.44	10,414	0	4,793	5,621	6,860	15,680
1988	199,181	0	2.84	2.80	5.64	11,234	0	5,176	6,057	6,860	15,680
1989	206,042	0	3.19	2.90	6.09	12,548	0	5,591	6,957	6,860	15,680
1990	212,994	0	3.58	2.90	6.48	13,802	0	6,038	7,764	6,860	15,680
1991	219,067	0	3.58	3.00	6.58	14,415	0	6,521	7,894	6,860	15,680
1992	226,907	0	3.58	3.10	6.68	15,157	0	7,043	8,115	6,860	15,680
1993	236,183	0	3.58	3.20	6.78	16,013	0	7,606	8,407	6,860	15,680
1994	245,893	0	3.58	3.30	6.88	16,917	0	8,214	8,703	6,860	15,680
1995	255,439	0	3.58	3.40	6.98	17,830	0	8,872	8,958	6,860	15,680
1996	260,533	0	3.58	3.50	7.08	18,446	0	9,581	8,864	6,860	15,680
1997	265,897	0	3.58	3.60	7.18	19,091	0	10,348	8,744	6,860	15,680
1998	271,482	0	3.58	3.80	7.38	20,035	0	11,176	8,860	6,860	15,680
1999	277,343	0	3.58	3.90	7.48	20,745	0	12,070	8,676	6,860	15,680
2000	283,498	0	3.58	4.10	7.68	21,772	0	13,035	8,737	6,860	15,680
2001	288,220	0	3.58	4.30	7.88	22,712	0	14,078	8,634	6,860	15,680
2002	290,043	0	3.58	4.50	8.08	23,435	0	15,204	8,231	6,860	15,680
2003	291,926	0	3.58	4.70	8.28	24,171	0	16,421	7,751	6,860	15,680
2004	293,889	0	3.58	5.00	8.58	25,216	0	17,734	7,481	6,860	15,680
2005	295,935	0	3.58	5.30	8.88	26,279	0	19,153	7,126	6,860	15,680
2006	298,067	0	3.58	5.60	9.18	27,363	0	20,685	6,677	6,860	15,680
2007	300,290	0	3.58	5.90	9.48	28,467	0	22,340	6,127	6,860	15,680
2008	302,608	0	3.58	6.30	9.88	29,898	0	24,127	5,770	6,860	15,680
2009	305,023	0	3.58	6.60	10.18	31,051	0	26,058	4,994	6,860	15,680
2010	307,541	0	3.58	7.00	10.58	32,538	0	28,142	4,396	6,860	15,680
2011	310,165	0	3.58	7.40	10.98	34,056	0	30,394	3,663	6,860	15,680
2012	312,901	0	3.58	7.80	11.38	35,608	0	32,825	2,783	6,860	15,680
2013	315,753	0	3.58	8.30	11.88	37,511	0	35,451	2,060	6,860	15,680
2014	318,725	0	3.58	8.70	12.28	39,139	0	38,287	852	6,860	15,680
2015	321,824	0	3.58	9.20	12.78	41,129	0	41,350	0	6,860	15,680
2016	325,053	0	3.58	9.70	13.28	43,167	0	44,658	0	6,860	15,680
2017	328,420	0	3.58	10.09	13.67	44,888	0	48,231	0	6,860	15,680
2018	331,929	0	3.58	10.49	14.07	46,707	0	52,089	0	6,860	15,680
2019	335,587	0	3.58	10.91	14.49	48,631	0	56,256	0	6,860	15,680
2020	339,400	0	3.58	11.35	14.93	50,664	0	60,757	0	6,860	15,680
2021	343,375	0	3.58	11.80	15.38	52,816	0	65,617	0	6,860	15,680
2022	347,518	0	3.58	12.27	15.85	55,094	0	70,867	0	6,860	15,680
2023	351,836	0	3.58	12.76	16.34	57,506	0	76,536	0	6,860	15,680
2024	356,338	0	3.58	13.28	16.86	60,061	0	82,659	0	6,860	15,680
2025	361,030	0	3.58	13.81	17.39	62,789	0	89,272	0	6,860	15,680
2026	365,921	0	3.58	14.36	17.94	65,640	0	96,413	0	6,860	15,680
2027	371,019	0	3.58	14.93	18.51	68,686	0	104,127	0	6,860	15,680
2028	376,334	0	3.58	15.53	19.11	71,917	0	112,457	0	6,860	15,680
2029	378,607	0	3.58	16.15	19.73	74,704	0	121,453	0	6,860	15,680
2030	378,607	0	3.58	16.80	20.38	77,150	0	131,169	0	6,860	15,680
2031	378,607	0	3.58	17.47	21.05	79,694	0	141,663	0	6,860	15,680
2032	378,607	0	3.58	18.17	21.75	82,399	0	152,996	0	6,860	15,680
2033	378,607	0	3.58	18.89	22.47	85,091	0	165,236	0	6,860	15,680
2034	378,607	0	3.58	19.65	23.23	87,952	0	178,455	0	6,860	15,680
2035	378,607	0	3.58	20.44	24.02	90,928	0	192,731	0	6,860	15,680
2036	378,607	0	3.58	21.25	24.83	94,023	0	208,149	0	6,860	15,680
2037	378,607	0	3.58	22.10	25.68	97,242	0	224,801	0	6,860	15,680
	16,027,515	0				2,193,629	0	2,979,343	193,430	356,720	815,360

ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/KWH)	YEAR
M	N	O	P	Q	R	S
0	196,000	2,332	3.52	10,205	5.62	1986
0	196,000	1,239	3.52	11,217	5.86	1987
0	196,000	803	3.52	11,234	5.64	1988
0	196,000	0	3.52	12,548	6.09	1989
0	196,000	0	4.02	13,802	6.48	1990
0	196,000	0	4.02	14,415	6.58	1991
0	196,000	0	4.12	15,157	6.68	1992
0	196,000	0	4.32	16,013	6.78	1993
0	196,000	0	4.42	16,917	6.88	1994
0	196,000	0	4.62	17,830	6.98	1995
0	196,000	0	4.52	18,446	7.08	1996
0	196,000	0	4.52	19,091	7.18	1997
0	196,000	0	4.52	20,035	7.38	1998
0	196,000	0	4.42	20,745	7.48	1999
0	196,000	0	4.52	21,772	7.68	2000
0	196,000	0	4.42	22,712	7.88	2001
0	196,000	0	4.22	23,435	8.08	2002
0	196,000	0	4.02	24,171	8.28	2003
0	196,000	0	3.82	25,216	8.58	2004
0	196,000	0	3.62	26,462	8.94	2005
0	196,000	183	3.52	28,095	9.43	2006
0	196,000	733	3.52	29,557	9.84	2007
0	196,000	1,090	3.52	31,764	10.50	2008
0	196,000	1,866	3.52	33,516	10.99	2009
0	196,000	2,464	3.52	35,735	11.62	2010
0	196,000	3,197	3.52	38,133	12.29	2011
0	196,000	4,077	3.52	40,408	12.91	2012
0	196,000	4,800	3.52	43,519	13.78	2013
0	196,000	6,008	3.52	45,999	14.43	2014
0	196,000	6,860	3.52	47,989	14.91	2015
0	196,000	6,860	3.52	50,027	15.39	2016
0	196,000	6,860	3.52	51,748	15.76	2017
0	196,000	6,860	3.52	53,567	16.14	2018
0	196,000	6,860	3.52	55,491	16.54	2019
0	196,000	6,860	3.52	57,524	16.95	2020
0	196,000	6,860	3.52	59,676	17.38	2021
0	196,000	6,860	3.52	61,954	17.83	2022
0	196,000	6,860	3.52	64,366	18.29	2023
0	196,000	6,860	3.52	66,921	18.78	2024
0	196,000	6,860	3.52	69,629	19.29	2025
0	196,000	6,860	3.52	72,500	19.81	2026
0	196,000	6,860	3.52	75,546	20.36	2027
0	196,000	6,860	3.52	78,777	20.93	2028
0	196,000	6,860	3.52	81,564	21.54	2029
0	196,000	6,860	3.52	84,010	22.19	2030
0	196,000	6,860	3.52	86,554	22.86	2031
0	196,000	6,860	3.52	89,199	23.56	2032
0	196,000	6,860	3.52	91,951	24.29	2033
0	196,000	6,860	3.52	94,812	25.04	2034
0	196,000	6,860	3.52	97,788	25.81	2035
0	196,000	6,860	3.52	100,883	26.65	2036
0	196,000	6,860	3.52	97,242	25.68	2037
0	10,192,000	186,571	0.92	2,377,868		

Loan Principal: \$100,000.00

Rate of Return

D & M Inflation Rate

4.00%

Rate of Return Floor

8.00%

Rate of Return Ceiling

8.00%

Change in Base Load Forecast

0.00%

10

YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/MMH)	D & M RATE (CENTS/MMH)	TOTAL RATE (CENTS/MMH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	OM EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)	ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/MMH)	YEAR
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1986	191,496	0	2.64	2.30	4.94	8,966	0	4,438	4,528	15,680	15,680	0	196,000	11,152	8.0%	18,847	10.38	1986
1987	191,437	0	2.64	2.80	5.44	10,414	0	4,616	5,799	15,680	15,680	0	196,000	9,881	8.0%	19,661	10.27	1987
1988	199,181	0	2.84	2.80	5.64	11,234	0	4,800	6,434	15,680	15,680	0	196,000	9,246	8.0%	19,358	9.72	1988
1989	206,042	0	3.19	2.90	6.09	12,548	0	4,992	7,556	15,680	15,680	0	196,000	8,124	8.0%	19,618	9.52	1989
1990	212,994	0	3.58	2.90	6.48	13,802	0	5,192	8,610	15,680	15,680	0	196,000	7,070	8.0%	20,467	9.61	1990
1991	219,067	0	3.58	3.00	6.58	14,415	0	5,400	9,015	15,680	15,680	0	196,000	6,665	8.0%	20,553	9.38	1991
1992	226,907	0	3.58	3.10	6.68	15,157	0	5,615	9,542	15,680	15,680	0	196,000	6,138	8.0%	20,664	9.11	1992
1993	236,183	0	3.58	3.20	6.78	16,013	0	5,840	10,173	15,680	15,680	0	196,000	5,507	8.0%	20,849	8.83	1993
1994	245,893	0	3.58	3.30	6.88	16,917	0	6,074	10,844	15,680	15,680	0	196,000	4,836	8.0%	21,084	8.57	1994
1995	255,439	0	3.58	3.40	6.98	17,830	0	6,317	11,513	15,680	15,680	0	196,000	4,167	8.0%	21,633	8.47	1995
1996	260,533	0	3.58	3.50	7.08	18,446	0	6,569	11,876	15,680	15,680	0	196,000	3,804	8.0%	21,866	8.39	1996
1997	265,897	0	3.58	3.60	7.18	19,091	0	6,832	12,259	15,680	15,680	0	196,000	3,421	8.0%	21,841	8.21	1997
1998	271,482	0	3.58	3.80	7.38	20,035	0	7,105	12,910	15,680	15,680	0	196,000	2,750	8.0%	22,360	8.24	1998
1999	277,343	0	3.58	3.90	7.48	20,745	0	7,390	13,356	15,680	15,680	0	196,000	2,324	8.0%	22,339	8.05	1999
2000	283,488	0	3.58	4.10	7.68	21,772	0	7,685	14,087	15,680	15,680	0	196,000	1,593	8.0%	22,733	9.02	2000
2001	288,220	0	3.58	4.30	7.88	22,712	0	7,993	14,719	15,680	15,680	0	196,000	961	8.0%	23,269	8.07	2001
2002	290,043	0	3.58	4.50	8.08	23,435	0	8,312	15,123	15,680	15,680	0	196,000	557	8.0%	23,589	8.13	2002
2003	291,926	0	3.58	4.70	8.28	24,171	0	8,645	15,527	15,680	15,680	0	196,000	153	8.0%	24,171	8.28	2003
2004	293,889	0	3.58	5.00	8.58	25,216	0	8,991	16,225	15,680	15,680	545	196,000	0	8.0%	25,216	8.58	2004
2005	295,935	0	3.58	5.30	8.88	26,279	0	9,350	16,929	15,680	15,680	1,249	195,455	0	8.0%	26,279	8.88	2005
2006	298,067	0	3.58	5.60	9.18	27,363	0	9,724	17,638	15,636	15,636	2,002	194,206	0	8.1%	27,363	9.18	2006
2007	300,290	0	3.58	5.90	9.48	28,467	0	10,113	18,354	15,536	15,536	2,818	192,204	0	8.1%	28,467	9.48	2007
2008	302,608	0	3.58	6.30	9.88	29,898	0	10,518	19,380	15,376	15,376	4,004	189,386	0	8.1%	29,898	9.88	2008
2009	305,023	0	3.58	6.60	10.18	31,051	0	10,938	20,113	15,151	15,151	4,962	185,383	0	8.2%	31,051	10.18	2009
2010	307,541	0	3.58	7.00	10.58	32,538	0	11,376	21,162	14,831	14,831	6,331	180,421	0	8.2%	32,538	10.58	2010
2011	310,165	0	3.58	7.40	10.98	34,056	0	11,831	22,225	14,434	14,434	7,791	174,089	0	8.3%	34,056	10.98	2011
2012	312,901	0	3.58	7.80	11.38	35,608	0	12,304	23,304	13,927	13,927	9,377	166,298	0	8.4%	35,608	11.38	2012
2013	315,753	0	3.58	8.30	11.88	37,511	0	12,796	24,715	13,304	13,304	11,411	156,921	0	8.5%	37,511	11.88	2013
2014	318,725	0	3.58	8.70	12.28	39,139	0	13,308	25,831	12,554	12,554	13,277	145,510	0	8.6%	39,139	12.28	2014
2015	321,824	0	3.58	9.20	12.78	41,129	0	13,841	27,289	11,641	11,641	15,648	132,232	0	8.8%	41,129	12.78	2015
2016	325,053	0	3.58	9.70	13.28	43,167	0	14,394	28,773	10,579	10,579	18,194	116,585	0	9.1%	43,167	13.28	2016
2017	328,420	0	3.58	10.09	13.67	44,888	0	14,970	29,918	9,327	9,327	20,592	98,390	0	9.5%	44,888	13.67	2017
2018	331,929	0	3.58	10.49	14.07	46,707	0	15,569	31,139	7,871	7,871	23,267	77,799	0	10.1%	46,707	14.07	2018
2019	335,587	0	3.58	10.91	14.49	48,631	0	16,192	32,439	6,224	6,224	26,215	54,531	0	11.4%	48,631	14.49	2019
2020	339,400	0	3.58	11.35	14.93	50,664	0	16,839	33,925	4,362	4,362	28,316	28,316	0	15.4%	50,664	14.93	2020
2021	343,375	0	3.58	11.80	15.38	52,816	0	17,513	35,304	2,265	0	0	0	0	ERR	17,513	5.10	2021
2022	347,518	0	3.58	12.27	15.85	55,094	0	18,213	36,881	0	0	0	0	0	ERR	18,213	5.24	2022
2023	351,836	0	3.58	12.76	16.34	57,506	0	18,942	38,564	0	0	0	0	0	ERR	18,942	5.38	2023
2024	356,338	0	3.58	13.28	16.86	60,061	0	19,699	40,362	0	0	0	0	0	ERR	19,699	5.53	2024
2025	361,030	0	3.58	13.81	17.39	62,769	0	20,487	42,282	0	0	0	0	0	ERR	20,487	5.67	2025
2026	365,921	0	3.58	14.36	17.94	65,640	0	21,307	44,333	0	0	0	0	0	ERR	21,307	5.82	2026
2027	371,019	0	3.58	14.93	18.51	68,686	0	22,159	46,526	0	0	0	0	0	ERR	22,159	5.97	2027
2028	376,334	0	3.58	15.53	19.11	71,917	0	23,046	48,872	0	0	0	0	0	ERR	23,046	6.12	2028
2029	378,607	0	3.58	16.15	19.73	74,704	0	23,967	50,736	0	0	0	0	0	ERR	23,967	6.33	2029
2030	378,607	0	3.58	16.80	20.38	77,150	0	24,926	52,224	0	0	0	0	0	ERR	24,926	6.58	2030
2031	378,607	0	3.58	17.47	21.05	79,694	0	25,923	53,770	0	0	0	0	0	ERR	25,923	6.85	2031
2032	378,607	0	3.58	18.17	21.75	82,339	0	26,960	55,379	0	0	0	0	0	ERR	26,960	7.12	2032
2033	378,607	0	3.58	18.89	22.47	85,091	0	28,038	57,052	0	0	0	0	0	ERR	28,038	7.41	2033
2034	378,607	0	3.58	19.65	23.23	87,952	0	29,160	58,792	0	0	0	0	0	ERR	29,160	7.70	2034
2035	378,607	0	3.58	20.44	24.02	90,928	0	30,326	60,602	0	0	0	0	0	ERR	30,326	8.01	2035
2036	378,607	0	3.58	21.25	24.83	94,023	0	31,539	62,483	0	0	0	0	0	ERR	31,539	8.33	2036
2037	378,607	0	3.58	22.10	25.68	97,242	0	32,801	64,441	0	0	0	0	0	ERR	32,801	8.66	2037

16,027,515

2,193,629

741,877

1,451,752

496,618

494,353

196,000

6,011,726

88,350

9.0%

1,422,224

Loan Principal (\$=000's) \$196,000
 O & M Inflation Rate 2.00%
 Rate of Return Floor 3.50%
 Rate of Return Ceiling 8.00%
 Change in Base Load Forecast 0.00%

YEAR	FORECAST SALES (MMH)	ADDITIONAL SALES (MMH)	DEBT SVC RATE (CENTS/KWH)	O & M RATE (CENTS/KWH)	TOTAL RATE (CENTS/KWH)	INITIAL REVENUE STREAM (\$=000's)	ADDITIONAL REVENUE (\$=000's)	O&M EXPENSE (\$=000's)	BALANCE REMAINING FOR DEBT SV (\$=000's)	MINIMUM RETURN (FLOOR) (\$=000's)	MAXIMUM RETURN (CEILING) (\$=000's)
A	B	C	D	E	F	G	H	I	J	K	L
1986	181,496	0	2.64	2.30	4.94	8,966	0	4,438	4,528	6,860	15,680
1987	191,437	0	2.64	2.80	5.44	10,414	0	4,527	5,887	6,860	15,680
1988	199,181	0	2.84	2.80	5.64	11,234	0	4,617	6,617	6,860	15,680
1989	206,042	0	3.19	2.90	6.09	12,548	0	4,710	7,838	6,860	15,680
1990	212,994	0	3.58	2.90	6.48	13,802	0	4,804	8,998	6,860	15,680
1991	219,067	0	3.58	3.00	6.58	14,415	0	4,900	9,515	6,860	15,680
1992	226,907	0	3.58	3.10	6.68	15,157	0	4,998	10,159	6,860	15,680
1993	236,183	0	3.58	3.20	6.78	16,013	0	5,098	10,915	6,860	15,680
1994	245,893	0	3.58	3.30	6.88	16,917	0	5,200	11,718	6,860	15,680
1995	255,439	0	3.58	3.40	6.98	17,830	0	5,304	12,526	6,860	15,680
1996	260,533	0	3.58	3.50	7.08	18,446	0	5,410	13,036	6,860	15,680
1997	265,897	0	3.58	3.60	7.18	19,091	0	5,518	13,573	6,860	15,680
1998	271,482	0	3.58	3.80	7.38	20,035	0	5,628	14,407	6,860	15,680
1999	277,343	0	3.58	3.90	7.48	20,745	0	5,741	15,004	6,860	15,680
2000	283,488	0	3.58	4.10	7.68	21,772	0	5,856	15,916	6,860	15,680
2001	288,220	0	3.58	4.30	7.88	22,712	0	5,973	16,739	6,860	15,680
2002	290,043	0	3.58	4.50	8.08	23,435	0	6,092	17,343	6,852	15,661
2003	291,926	0	3.58	4.70	8.28	24,171	0	6,214	17,957	6,815	15,576
2004	293,889	0	3.58	5.00	8.58	25,216	0	6,339	18,877	6,756	15,442
2005	295,935	0	3.58	5.30	8.88	26,279	0	6,465	19,814	6,672	15,251
2006	298,067	0	3.58	5.60	9.18	27,363	0	6,595	20,768	6,552	14,977
2007	300,290	0	3.58	5.90	9.48	28,467	0	6,727	21,741	6,393	14,612
2008	302,608	0	3.58	6.30	9.88	29,898	0	6,861	23,037	6,190	14,148
2009	305,023	0	3.58	6.60	10.18	31,051	0	6,998	24,053	5,940	13,578
2010	307,541	0	3.58	7.00	10.58	32,538	0	7,138	25,400	5,629	12,867
2011	310,165	0	3.58	7.40	10.98	34,056	0	7,281	26,775	5,263	12,029
2012	312,901	0	3.58	7.80	11.38	35,608	0	7,427	28,182	4,824	11,026
2013	315,753	0	3.58	8.30	11.88	37,511	0	7,575	29,936	4,308	9,847
2014	318,725	0	3.58	8.70	12.28	39,139	0	7,727	31,413	3,707	8,474
2015	321,824	0	3.58	9.20	12.78	41,129	0	7,881	33,248	3,004	6,867
2016	325,053	0	3.58	9.70	13.28	43,167	0	8,039	35,128	2,201	5,032
2017	328,420	0	3.58	10.09	13.67	44,888	0	8,200	36,689	1,278	2,921
2018	331,929	0	3.58	10.49	14.07	46,707	0	8,364	38,344	275	0
2019	335,587	0	3.58	10.91	14.49	48,631	0	8,531	40,100	0	0
2020	339,400	0	3.58	11.35	14.93	50,664	0	8,701	41,963	0	0
2021	343,375	0	3.58	11.80	15.38	52,816	0	8,876	43,941	0	0
2022	347,518	0	3.58	12.27	15.85	55,094	0	9,053	46,041	0	0
2023	351,836	0	3.58	12.76	16.34	57,506	0	9,234	48,272	0	0
2024	356,338	0	3.58	13.28	16.86	60,061	0	9,419	50,642	0	0
2025	361,030	0	3.58	13.81	17.39	62,769	0	9,607	53,162	0	0
2026	365,921	0	3.58	14.36	17.94	65,640	0	9,799	55,841	0	0
2027	371,019	0	3.58	14.93	18.51	68,686	0	9,995	58,690	0	0
2028	376,334	0	3.58	15.53	19.11	71,917	0	10,195	61,722	0	0
2029	378,607	0	3.58	16.15	19.73	74,704	0	10,399	64,305	0	0
2030	378,607	0	3.58	16.80	20.38	77,150	0	10,607	66,543	0	0
2031	378,607	0	3.58	17.47	21.05	79,694	0	10,819	68,874	0	0
2032	378,607	0	3.58	18.17	21.75	82,339	0	11,036	71,304	0	0
2033	378,607	0	3.58	18.89	22.47	85,091	0	11,256	73,834	0	0
2034	378,607	0	3.58	19.65	23.23	87,952	0	11,481	76,471	0	0
2035	378,607	0	3.58	20.44	24.02	90,928	0	11,711	79,217	0	0
2036	378,607	0	3.58	21.25	24.83	94,023	0	11,945	82,078	0	0
2037	378,607	0	3.58	22.10	25.68	97,242	0	12,184	85,057	0	0

16,027,515 0 2,193,629 0 399,493 1,794,137 192,369 439,188

ACTUAL PRINCIPAL RETIREMENT (\$=000's)	NEW PRINCIPAL BALANCE (\$=000's)	ADDITIONAL CAPITAL REQUIRED (\$=000's)	ACTUAL RATE OF RETURN (%)	TOTAL REVENUE REQUIREMENT (\$=000's)	ACTUAL RATE REQUIRED (CENTS/KWH)	YEAR
M	N	O	P	Q	R	S
0	196,000	2,332	3.52	9,938	5.48	1986
0	196,000	973	3.52	10,658	5.57	1987
0	196,000	243	3.52	11,234	5.64	1988
0	196,000	0	4.02	12,548	6.09	1989
0	196,000	0	4.62	13,802	6.48	1990
0	196,000	0	4.92	14,415	6.58	1991
0	196,000	0	5.22	15,157	6.68	1992
0	196,000	0	5.62	16,013	6.78	1993
0	196,000	0	6.02	16,917	6.88	1994
0	196,000	0	6.42	17,830	6.98	1995
0	196,000	0	6.72	18,446	7.08	1996
0	196,000	0	6.92	19,091	7.18	1997
0	196,000	0	7.42	20,035	7.38	1998
0	196,000	0	7.72	20,745	7.48	1999
236	196,000	0	8.02	21,772	7.68	2000
1,059	195,764	0	8.92	22,712	7.88	2001
1,682	194,705	0	8.02	23,435	8.08	2002
2,381	193,023	0	8.12	24,171	8.28	2003
3,435	190,642	0	8.12	25,216	8.58	2004
4,562	187,207	0	8.12	26,279	8.88	2005
5,791	182,645	0	8.22	27,363	9.18	2006
7,129	176,854	0	8.32	28,467	9.48	2007
8,888	169,724	0	8.32	29,898	9.88	2008
10,475	160,836	0	8.42	31,051	10.18	2009
12,533	150,361	0	8.62	32,538	10.58	2010
14,746	137,828	0	8.72	34,056	10.98	2011
17,155	123,082	0	9.02	35,608	11.38	2012
20,090	105,927	0	9.32	37,511	11.88	2013
22,939	85,837	0	9.92	39,139	12.28	2014
26,381	62,898	0	10.92	41,129	12.78	2015
30,096	36,517	0	13.82	43,167	13.28	2016
6,421	6,421	0	45.52	44,888	13.67	2017
0	0	0	ERR	8,364	2.52	2018
0	0	0	ERR	8,531	2.54	2019
0	0	0	ERR	8,701	2.56	2020
0	0	0	ERR	8,876	2.58	2021
0	0	0	ERR	9,053	2.61	2022
0	0	0	ERR	9,234	2.62	2023
0	0	0	ERR	9,419	2.64	2024
0	0	0	ERR	9,607	2.66	2025
0	0	0	ERR	9,799	2.68	2026
0	0	0	ERR	9,995	2.69	2027
0	0	0	ERR	10,195	2.71	2028
0	0	0	ERR	10,399	2.75	2029
0	0	0	ERR	10,607	2.80	2030
0	0	0	ERR	10,819	2.86	2031
0	0	0	ERR	11,036	2.91	2032
0	0	0	ERR	11,256	2.97	2033
0	0	0	ERR	11,481	3.03	2034
0	0	0	ERR	11,711	3.09	2035
0	0	0	ERR	11,945	3.16	2036
0	0	0	ERR	12,184	3.22	2037

196,000 5,300,271 3,548 9.7% 988,445

12.

10318-568



U.S. DEPARTMENT OF COMMERCE
Economic Development Administration
701 "C" Street, Box 10
Anchorage, Alaska 99513

May 9, 1985

Honorable John L. Sund
District 1-B
The Legislature
State of Alaska
Juneau, Alaska 99811

Dear Representative Sund:

In January, 1985, the Economic Development Administration of the U. S. Department of Commerce authorized the submission of a formal application by the City of Saxman for a grant in the amount of \$550,000, contingent upon a matching State Legislative appropriation in the amount of \$1,245,312 for the construction of a traditional Tribal House (Longhouse).

This project would provide some \$650,000 or more in construction wages to local workers in an area of exceedingly high unemployment. The project, which is part of the Tlingit-Haida Central Council and City of Saxman Overall Economic Development Programs, and is a significant component of tourism development planned within the Ketchikan area, would also employ some 100 local residents during the tourist season through dance performances, cultural interpretation, totem pole and other craft demonstrations, and from food and other sales.

As this appears to be a true economic development project benefitting Southeast Alaska and is one which is revenue producing, I am anxious to see the project succeed.

Because of your indicated support for this project, the City of Saxman has requested that I contact you on the current status. If there is some way in which I may be of assistance in this regard, please let me know.

Sincere best regards,

Bernhard Richert

Bernhard Richert
Economic Development
Representative

Original sponsor: House Special Committee
on State Loans

1
2 IN THE HOUSE

BY THE FINANCE COMMITTEE

3 CS FOR HOUSE BILL NO. 219 (Finance)

4 IN THE LEGISLATURE OF THE STATE OF ALASKA

5 FOURTEENTH LEGISLATURE - FIRST SESSION

6 A BILL

7 For an Act entitled: "An Act relating to the applicability of the Alaska
8 Public Utilities Commission Act to certain electric
9 utilities; power development loans; and the energy
10 program for Alaska."

11 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

12 * Section 1. AS 42.05.711(b) is amended to read:

13 (b) Public utilities owned and operated by a political subdivi-
14 sion of the state and electric operating entities established as an
15 instrumentality of two or more public utilities owned and operated by
16 a political subdivision of the state, none of whose utilities is in
17 competition with any other utility, are exempt from the provisions of
18 this chapter, other than the provisions of AS 42.05.221 - 42.05.281,
19 unless the owner and operator elects to be subject to all provisions
20 of this chapter.

21 * Sec. 2. AS 44.33.620(a) is amended to read:

22 (a) A loan from the fund shall [MUST] be repaid in accordance
23 with the terms that the department determines to be appropriate. In
24 establishing the terms, including provision for a return to the state
25 of an amount in excess of the principal amount of the loan, the de-
26 partment shall consider the revenue that the authority could reason-
27 ably derive from the sale of power from the projects based upon

28 (1) [THE MARKET RATE OF INTEREST FOR A LOAN OF COMPARABLE
29 SIZE AND DURATION AT THE TIME THE LOAN IS MADE; AND

(2)] the [ESTIMATED] costs, at the time the power sales

1
2 agreement is initially negotiated or renegotiated, of alternative
3 sources of energy generation for utilities purchasing power from a
4 project financed with a loan from the fund;

5 (2) the effect of the loan terms on the wholesale power
6 costs to all utilities purchasing power from the initial project;

7 (3) the long-term benefits to consumers and communities of
8 stable wholesale power costs;

9 (4) the affordability of initial wholesale power costs that
10 result from the loan terms with utilities purchasing power from the
11 initial project;

12 (5) increasing repayment, not to exceed five years, of debt
13 service payment per kilowatt hour gradually over the initial period of
14 a loan repayment schedule to the extent necessary to avoid significant
15 rate increases to the consumer;

16 (6) the existing excess capacity of power projects; and

17 (7) the effects of increased capacity utilization, infla-
18 tion, and alternative energy production costs over the life of the
19 initial project.

20 * Sec. 3. AS 44.33.620 is amended by adding a new subsection to read:

21 (d) In (a) of this section "initial project" means the project
22 described in AS 44.83.398(a).

23 * Sec. 4. AS 44.33 is amended by adding a new section to read:

24 Sec. 44.33.625. RATE REOPENERS. A power sales agreement for the
25 sale of power from the initial project, as described in AS 44.83.-
26 398(a), financed with a loan under AS 44.33.610 may include among its
27 provisions an agreed schedule of wholesale power rates notwithstanding
28 the provisions of AS 44.83.398, but must include a provision for a
29 rate reopener.

* Sec. 5. AS 44.83.425(5) is amended to read:

1
2 (5) "qualified utility" means an electric utility or an
3 electric operating entity established as an instrumentality of two or
4 more electric utilities [THAT IS] certified by the Alaska Public
5 Utilities Commission to serve all or part of a market area that is
6 served or will be served by the power project, [AND] that the author-
7 ity determines is capable of operating and maintaining the power
8 project.
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25 of an amount in excess of the principal amount of the loan, the de-
26 partment shall consider the revenue that the authority could reason-
27 ably derive from the sale of power from the projects based upon

28 (1) [THE MARKET RATE OF INTEREST FOR A LOAN OF COMPARABLE
29 SIZE AND DURATION AT THE TIME THE LOAN IS MADE; AND

(2)] the [ESTIMATED] costs, at the time the power sales

1 agreement is initially negotiated or renegotiated, of alternative
2 sources of energy generation for utilities purchasing power from a
3 project financed with a loan from the fund;

4
5 (2) the effect of the loan terms on the wholesale power
6 costs to all utilities purchasing power from the initial project;

7 (3) the long-term benefits to consumers and communities of
8 stable wholesale power costs;

9 (4) the affordability of initial wholesale power costs that
10 result from the loan terms with utilities purchasing power from the
11 initial project;

12 (5) increasing repayment, not to exceed five years, of debt
13 service payment per kilowatt hour gradually over the initial period of
14 a loan repayment schedule to the extent necessary to avoid significant
15 rate increases to the consumer;

16 (6) the existing excess capacity of power projects; and

17 (7) the effects of increased capacity utilization, infla-
18 tion, and alternative energy production costs over the life of the
19 initial project.

20 * Sec. 3. AS 44.33.620 is amended by adding a new subsection to read:

21 (d) In (a) of this section "initial project" means the project
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24 Sec. 44.33.625. RATE REOPENERS. A power sales agreement for the
25 sale of power from the initial project, as described in AS 44.83.-
26 398(a), financed with a loan under AS 44.33.610 may include among its
27 provisions an agreed schedule of wholesale power rates notwithstanding
28 the provisions of AS 44.83.398, but must include a provision for a
29 rate reopener.

* Sec. 5. AS 44.83.425(5) is amended to read:

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3 electric operating entity established as an instrumentality of two or
4 more electric utilities [THAT IS] certified by the Alaska Public
5 Utilities Commission to serve all or part of a market area that is
6 served or will be served by the power project, [AND] that the author-
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8 project.
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AMENDMENT

TO: "Discussion Draft" HB 219

Page 2, Line 23:

Replace Section 4 with:

* Sec. 4. AS 44.33 is amended by adding a new section to read:

Sec. 44.33.^{DS} RATE REOPENERS. A power sales agreement for the sale of power from the initial project financed with a loan under AS 44.33.610 may include among its provisions an agreed schedule of wholesale power rates notwithstanding the provisions of AS 44.83.398 but must include a provision for a rate reopener, after the first 15 years.

P.J.

① If this is acceptable we have a deal.

② The major issue in .398 is the separate accounting of debt service and O+M.

The ability to avoid .398 will allow them to be ~~as~~ put together in one fixed rate.

③ Health is discussing issue with your staff

Dave:

now

The communities and Messersmith have agreed to trust Health and accept Powhite's arrangement. Shively assured me Health has direct support of the governor. S.H.

This looks good to me
let's get a clean
COPY - 1/17
talk to Richard
J.P.

~~105~~

JOHN -

I DON'T LIKE POLICY BASED
ON PERSONALITY, HOWEVER, I WILL
NOT OBJECT IF WE CAN GET ALL
TO SIGN OFF ON IT. BETTER AN
UNDERSTANDING, HOWEVER FLAWED,
THAN NOTHING. CERTAINLY WE
HAVE MADE HEATH REALIZE THE
PRIORITY OF THE ISSUE. I
^{HOPE}
~~GUESS~~ OUR TIME HAS BEEN
WELL SPENT. NOW THE FLOOR FIGHT!
DUE

Thompson
Rosen
Pitt



KETCHIKAN PUBLIC UTILITIES

334 FRONT STREET

KETCHIKAN, ALASKA 99901

TELEPHONE 907-225-3111

MUNICIPALLY OWNED
ELECTRIC WATER PHONE

April 30, 1985

Representative John Sund
Alaska State Legislature
Pouch B (MS 3100)
Juneau, Alaska 99811

Dear Representative Sund:

Attached is a computer analysis that forms the most promising basis for agreement in our current discussions with the Alaska Power Authority. As we mentioned to John Hartle, this model was proposed by Bob Heath and Gordon Harrison, and grew out of certain reservations expressed by the Power Authority staff in response to a prior proposal that was also made by Gordon Harrison. The model appears to offer an affordable wholesale power rate to the communities and a fair return to the state.

For purposes of comparison, we have also included a printout of the first Harrison proposal. As you can see, that proposal featured an agreed wholesale power rate schedule that was to cover both debt service and operations and maintenance (O & M). Debt service would be funded out of any revenues remaining after O & M was paid. A floor and ceiling rate of return on the state's investment would trigger either increased payments by the communities or an early retirement of principal debt.

The Power Authority staff felt that this type of agreement might be difficult to administer because it would make debt service revenues highly dependent on O & M costs over which they would exercise little control. They were also concerned that it placed the risks of inflation, low loads, and excessive O & M costs squarely on the state, without sufficient incentives to the communities to assure the state of a fair return. Of course the benefits of high loads and lower-than-projected O & M costs would also be enjoyed by the state.

The new proposal has the virtue of simplicity. Each community would pay for O & M at the actual pooled average rate for all four projects, and thus bear much of the risk and benefit of fluctuations in load and cost. In this example, "debt service", or an amount above O & M, would be charged at 2.6 cents/kWh in 1986, rising to 4 cents/kWh by 1990, for all sales up to a particular combined forecast load. Sales above the

Representative John Sund
April 30, 1985
Page Two

forecast would be deemed "incentive sales" and would be charged at 1 cent/kWh less than the regular debt service amount. This lower rate would make it possible to attract large industrial loads, and would give the communities an additional incentive to increase project utilization. Finally, the communities would contribute a total of \$500,000 per year in addition to O & M to build a fund for renewals and replacements.

Because both O & M and debt service would be pooled, the wholesale power rate would be identical for all communities. This makes it possible to market the power from projects with high unit costs of O & M. The pooling of O & M is one reason that a statutory change is required in order to implement this proposal.

The rate of return to the state in this model is primarily sensitive to changes in load. By passing on the benefits of an incentive rate, we believe the communities can market substantial amounts of additional power to potential large loads that would otherwise develop their own diesel generation. The incentive sales increase the rate of return to the state to over 6%. They also lower the effective melded wholesale power rate to the communities. Without incentive sales, the forecast wholesale power rate would face stiff competition from alternative forms of generation, and the return to the state would be substantially lower.

The rate of return to the state is based upon revenues which include interest on reserves and the communities' contribution to the renewal and replacement fund. These are capital costs paid in consideration of the state's risk, and dedicated to the long-term preservation of the state's investment in the projects. The benefit of these funds will extend well beyond the period for which rate certainty will be guaranteed to the communities. We have not attempted to estimate the extent to which these reserves would be drawn down to pay for claims or improvements, or when such costs would be incurred.

The models provided are as follows:

1. Case H1-1 is the original proposal without any large loads.
2. Case H1-2 is the original proposal with large loads added.
3. Case H2-1 is the new proposal without any large loads.
4. Case H2-2 is the new proposal with large loads added.

I hope you will find this information useful evaluating the legislation necessary to implement the proposal. Please let me know if I can provide anything further.

Representative John Sund
April 30, 1985
Page Three

Very truly yours,

KETCHIKAN PUBLIC UTILITIES



Richard D. Newland
Utilities Manager

RDN:LLM

Enclosures

cc: Mayor & City Council
KPU Advisory Board
Doug Rosenberg, PTE&H
Four Dam Pool Members

PRESTON.1

(COM/Z6)

007/B6

20-Apr-63

Change in Base Load Forecast			0.00%			TOTAL	ACTUAL	BALANCE	MINIMUM	MAXIMUM	ACTUAL	NEW	ADDITIONAL	ACTUAL	TOTAL	ACTUAL
			LARGE LOAD			REVENUE	GSM	REMAINING	RETURN	RETURN	PRINCIPAL	PRINCIPAL	CAPITAL	RATE OF	REVENUE	RATE
YEAR	SALES (MMH)	RATE (CENTS/KWH)	REVENUE (\$=000's)	SALES (MMH)	RATE (CENTS/KWH)	REVENUE (\$=000's)	(COL. D+B)	EXPENSE (\$=000's)	FOR DEBT SV	(FLOOR)	(CEILING)	RETIREMENT	BALANCE	REQUIRED	REQUIREMENT (\$=000's)	REQUIREMENT (CENTS/KWH)
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1984	181,496	4.94	8,966	0	1.60	0	8,966	4,438	4,528	6,860	15,680	0	196,000	2,332	3.5X	6.22
1987	191,437	5.44	10,414	0	1.80	0	10,414	4,616	5,799	6,860	15,680	0	196,000	1,061	3.5X	5.99
1988	199,181	5.64	11,224	0	2.20	0	11,224	4,800	6,424	6,860	15,680	0	196,000	426	3.5X	5.85
1989	206,042	6.09	12,548	0	2.50	0	12,548	4,992	7,556	6,860	15,680	0	196,000	0	3.9X	6.09
1990	212,994	6.48	13,802	0	3.00	0	13,802	5,192	8,610	6,860	15,680	0	196,000	0	4.4X	6.48
1991	219,067	6.53	14,415	0	3.00	0	14,415	5,400	9,015	6,860	15,680	0	196,000	0	4.6X	6.53
1992	226,907	6.68	15,157	0	3.00	0	15,157	5,615	9,542	6,860	15,680	0	196,000	0	4.9X	6.68
1993	236,183	6.78	16,013	0	3.00	0	16,013	5,840	10,173	6,860	15,680	0	196,000	0	5.2X	6.78
1994	245,693	6.89	16,917	0	3.00	0	16,917	6,074	10,844	6,860	15,680	0	196,000	0	5.5X	6.89
1995	255,479	6.93	17,830	0	3.00	0	17,830	6,317	11,513	6,860	15,680	0	196,000	0	5.9X	6.93
1996	265,533	7.08	18,446	0	3.00	0	18,446	6,569	11,876	6,860	15,680	0	196,000	0	6.1X	7.08
1997	265,677	7.18	19,091	0	3.00	0	19,091	6,832	12,259	6,860	15,680	0	196,000	0	6.3X	7.18
1998	271,462	7.19	20,035	0	3.00	0	20,035	7,105	12,920	6,860	15,680	0	196,000	0	6.6X	7.18
1999	277,243	7.48	20,745	0	3.00	0	20,745	7,390	13,156	6,860	15,680	0	196,000	0	6.8X	7.48
2000	283,428	7.48	21,772	0	3.00	0	21,772	7,685	14,067	6,860	15,680	0	196,000	0	7.2X	7.48
2001	288,220	7.08	22,712	0	3.00	0	22,712	7,993	14,719	6,860	15,680	0	196,000	0	7.5X	7.88
2002	290,043	8.08	23,435	0	3.00	0	23,435	8,312	15,123	6,860	15,680	0	196,000	0	7.7X	8.08
2003	291,926	8.08	24,171	0	3.00	0	24,171	8,645	15,527	6,860	15,680	0	196,000	0	7.9X	8.08
2004	292,889	8.58	25,216	0	3.00	0	25,216	8,991	16,225	6,860	15,680	545	196,000	0	8.0X	8.58
2005	295,935	8.88	26,279	0	3.00	0	26,279	9,350	16,929	6,860	15,680	1,249	195,455	0	8.0X	8.88
2006	296,667	9.18	27,363	0	3.00	0	27,363	9,724	17,638	6,860	15,680	2,002	194,206	0	8.0X	9.18
2007	300,290	9.48	28,467	0	3.00	0	28,467	10,113	18,354	6,797	15,536	2,818	192,304	0	8.0X	9.48
2008	302,608	9.88	29,898	0	3.00	0	29,898	10,518	19,380	6,727	15,376	4,004	189,366	0	8.0X	9.88
2009	305,023	10.18	31,051	0	3.00	0	31,051	10,938	20,113	6,629	15,151	4,942	185,383	0	8.0X	10.18
2010	307,541	10.58	32,578	0	3.00	0	32,578	11,376	21,162	6,488	14,831	6,331	180,421	0	8.0X	10.58
2011	310,065	10.98	34,056	0	3.00	0	34,056	11,831	22,225	6,315	14,434	7,791	174,089	0	8.0X	10.98
2012	312,501	11.38	35,608	0	3.00	0	35,608	12,304	23,304	6,093	13,927	9,377	168,298	0	8.0X	11.38
2013	315,753	11.88	37,511	0	3.00	0	37,511	12,796	24,715	5,820	13,504	11,411	159,921	0	8.0X	11.88
2014	318,725	12.28	39,139	0	3.00	0	39,139	13,308	25,831	5,492	12,554	13,277	145,510	0	8.0X	12.28
2015	321,824	12.78	41,129	0	3.00	0	41,129	13,841	27,289	5,093	11,641	15,648	132,232	0	8.0X	12.78
2016	325,053	13.28	43,167	0	3.00	0	43,167	14,394	28,773	4,628	10,579	18,194	116,585	0	8.0X	13.28
2017	328,420	13.67	44,868	0	3.00	0	44,868	14,970	29,918	4,080	9,327	20,592	96,390	0	8.0X	13.67
2018	331,929	14.07	46,707	0	3.00	0	46,707	15,569	31,129	3,444	7,871	23,267	77,799	0	8.0X	14.07
2019	335,537	14.49	48,631	0	3.00	0	48,631	16,192	32,439	2,723	6,224	26,215	54,531	0	8.0X	14.49
2020	339,100	14.92	50,684	0	3.00	0	50,684	16,839	33,825	1,909	4,362	28,316	28,316	0	8.0X	14.92
2021	342,725	15.38	52,816	0	3.00	0	52,816	17,513	35,304	991	0	0	0	0	0.0X	15.38
2022	347,516	15.85	55,094	0	3.00	0	55,094	18,213	36,891	0	0	0	0	0	NA	15.85
2023	351,876	16.34	57,506	0	3.00	0	57,506	18,942	38,564	0	0	0	0	0	NA	16.34
2024	356,338	16.86	60,061	0	3.00	0	60,061	19,699	40,362	0	0	0	0	0	NA	16.86
2025	361,030	17.39	62,769	0	3.00	0	62,769	20,487	42,282	0	0	0	0	0	NA	17.39
2026	365,921	17.94	65,640	0	3.00	0	65,640	21,307	44,133	0	0	0	0	0	NA	17.94
2027	371,019	18.51	68,686	0	3.00	0	68,686	22,159	46,028	0	0	0	0	0	NA	18.51
2028	376,324	19.11	71,917	0	3.00	0	71,917	23,046	48,072	0	0	0	0	0	NA	19.11
2029	381,697	19.73	74,704	0	3.00	0	74,704	23,967	50,738	0	0	0	0	0	NA	19.73
2030	387,697	20.38	77,150	0	3.00	0	77,150	24,926	52,224	0	0	0	0	0	NA	20.38
2031	378,607	21.05	79,694	0	3.00	0	79,694	25,923	53,770	0	0	0	0	0	NA	21.05
2032	378,607	21.75	82,339	0	3.00	0	82,339	26,960	55,379	0	0	0	0	0	NA	21.75
2033	378,607	22.47	85,091	0	3.00	0	85,091	28,038	57,052	0	0	0	0	0	NA	22.47
2034	378,607	23.21	87,952	0	3.00	0	87,952	29,160	58,792	0	0	0	0	0	NA	23.21
2035	378,607	24.02	90,928	0	3.00	0	90,928	30,326	60,602	0	0	0	0	0	NA	24.02
2036	378,607	24.83	94,023	0	3.00	0	94,023	31,539	62,483	0	0	0	0	0	NA	24.83
2037	378,607	25.68	97,242	0	3.00	0	97,242	32,801	64,441	0	0	0	0	0	NA	25.68
16,027,515			0	0			2,193,629	741,877	1,451,752	217,270	494,253	196,000	6,011,726	3,820	1,348,846	

8174.070
4.002
3.302
8.002
0.002

Case Number	MI-2
Internal Rate of Return (IRR)	6.01

20-Apr-83

[illegible]

Loan Principal (\$=1000 \$) 8198,000
 Inflation Rate 4.002
 Internal Rate of Return (IRR) 5.472
 Case Number H2-1

20-Apr-85

BASELOAD		ADDITIONAL		TOTAL		OPERATIONS & MAINTENANCE				TOTAL		ACTUAL		
SALES	RATE	REVENUE	SALES	RATE	REVENUE	DEBT SVC	ADMIN	ON-SITE	R & R	TOTAL	RATE	TOTAL	RATE	
(MWH)	(CENTS/KWH)	(\$=1000 \$)	(MWH)	(CENTS/KWH)	(\$=1000 \$)	(\$=1000 \$)	(\$=1000 \$)	(\$=1000 \$)	(\$=1000 \$)	(\$=1000 \$)	(CENTS/KWH)	(\$=1000 \$)	(CENTS/KWH)	
YEAR	A	B	C	D	E	F	G	H	I	J	K	L	M	
1986	181,496	2.6	4,719	0	1.6	0	4,719	863	3,576	500	4,939	2.7	9,658	5.3
1987	191,457	2.8	5,360	0	1.8	0	5,360	898	3,719	500	5,117	2.7	10,477	5.5
1988	199,181	3.2	6,374	0	2.2	0	6,374	933	3,868	500	5,301	2.7	11,675	5.9
1989	206,042	3.5	7,211	0	2.5	0	7,211	971	4,023	500	5,493	2.7	12,705	6.2
1990	212,994	4.0	8,520	0	3.0	0	8,520	1,010	4,183	500	5,693	2.7	14,213	6.7
1991	219,067	4.0	8,763	0	3.0	0	8,763	1,050	4,351	500	5,901	2.7	14,663	6.7
1992	226,907	4.0	9,076	0	3.0	0	9,076	1,092	4,525	500	6,117	2.7	15,193	6.7
1993	236,185	4.0	9,447	0	3.0	0	9,447	1,136	4,706	500	6,341	2.7	15,789	6.7
1994	245,893	4.0	9,876	0	3.0	0	9,876	1,181	4,894	500	6,575	2.7	16,411	6.7
1995	255,439	4.0	10,218	0	3.0	0	10,218	1,228	5,090	500	6,818	2.7	17,036	6.7
1996	260,533	4.0	10,421	0	3.0	0	10,421	1,277	5,293	500	7,071	2.7	17,492	6.7
1997	265,897	4.0	10,636	0	3.0	0	10,636	1,329	5,505	500	7,334	2.8	17,970	6.8
1998	271,462	4.0	10,859	0	3.0	0	10,859	1,382	5,725	500	7,607	2.8	18,466	6.8
1999	277,243	4.0	11,094	0	3.0	0	11,094	1,437	5,954	500	7,891	2.8	18,985	6.8
2000	282,468	4.0	11,240	0	3.0	0	11,240	1,494	6,182	500	8,187	2.9	19,526	6.9
2001	288,220	4.0	11,529	0	3.0	0	11,529	1,554	6,410	500	8,494	2.9	20,073	6.9
2002	290,842	4.0	11,602	0	3.0	0	11,602	1,616	6,698	500	8,814	3.0	20,416	7.0
2003	291,926	4.0	11,677	0	3.0	0	11,677	1,681	6,966	500	9,147	3.1	20,824	7.1
2004	291,889	4.0	11,756	0	3.0	0	11,756	1,748	7,244	500	9,493	3.2	21,248	7.2
2005	295,935	4.0	11,837	0	3.0	0	11,837	1,818	7,574	500	9,852	3.3	21,690	7.3
2006	298,667	4.0	11,923	0	3.0	0	11,923	1,891	7,875	500	10,226	3.4	22,149	7.4
2007	300,290	4.0	12,012	0	3.0	0	12,012	1,967	8,149	500	10,615	3.5	22,627	7.5
2008	302,808	4.0	12,104	0	3.0	0	12,104	2,045	8,475	500	11,020	3.6	23,124	7.6
2009	305,022	4.0	12,201	0	3.0	0	12,201	2,127	8,814	500	11,441	3.8	23,642	7.8
2010	307,541	4.0	12,302	0	3.0	0	12,302	2,212	9,166	500	11,879	3.9	24,180	7.9
2011	310,145	4.0	12,407	0	3.0	0	12,407	2,301	9,533	500	12,334	4.0	24,740	8.0
2012	312,901	4.0	12,516	0	3.0	0	12,516	2,393	9,914	500	12,807	4.1	25,323	8.1
2013	315,753	4.0	12,630	0	3.0	0	12,630	2,488	10,311	500	13,299	4.2	25,929	8.2
2014	318,725	4.0	12,749	0	3.0	0	12,749	2,588	10,723	500	13,811	4.3	26,560	8.3
2015	321,824	4.0	12,873	0	3.0	0	12,873	2,691	11,152	500	14,344	4.5	27,217	8.5
2016	325,053	4.0	13,002	0	3.0	0	13,002	2,799	11,598	500	14,897	4.6	27,900	8.6
2017	328,420	4.0	13,137	0	3.0	0	13,137	2,911	12,062	500	15,473	4.7	28,610	8.7
2018	331,929	4.0	13,277	0	3.0	0	13,277	3,027	12,545	500	16,072	4.8	29,349	8.8
2019	335,587	4.0	13,423	0	3.0	0	13,423	3,149	13,047	500	16,695	5.0	30,119	9.0
2020	339,400	4.0	13,576	0	3.0	0	13,576	3,274	13,569	500	17,343	5.1	30,917	9.1
2021	343,375	4.0	13,735	0	3.0	0	13,735	3,405	14,111	500	18,017	5.2	31,752	9.2
2022	347,518	4.0	13,901	0	3.0	0	13,901	3,542	14,676	500	18,717	5.4	32,618	9.4
2023	351,836	4.0	14,073	0	3.0	0	14,073	3,683	15,263	500	19,446	5.5	33,519	9.5
2024	356,338	4.0	14,254	0	3.0	0	14,254	3,831	15,873	500	20,204	5.7	34,457	9.7
2025	361,020	4.0	14,441	0	3.0	0	14,441	3,984	16,508	500	20,992	5.8	35,433	9.8
2026	365,921	4.0	14,637	0	3.0	0	14,637	4,143	17,168	500	21,812	6.0	36,449	10.0
2027	371,019	4.0	14,841	0	3.0	0	14,841	4,309	17,855	500	22,664	6.1	37,505	10.1
2028	376,334	4.0	15,053	0	3.0	0	15,053	4,481	18,569	500	23,551	6.3	38,604	10.3
2029	381,867	4.0	15,144	0	3.0	0	15,144	4,661	19,312	500	24,473	6.5	39,617	10.5
2030	387,607	4.0	15,144	0	3.0	0	15,144	4,847	20,065	500	25,432	6.7	40,576	10.7
2031	378,607	4.0	15,144	0	3.0	0	15,144	5,041	20,890	500	26,429	7.0	41,573	11.0
2032	378,607	4.0	15,144	0	3.0	0	15,144	5,243	21,724	500	27,466	7.3	42,610	11.3
2033	378,607	4.0	15,144	0	3.0	0	15,144	5,452	22,593	500	28,545	7.5	43,659	11.5
2034	378,607	4.0	15,144	0	3.0	0	15,144	5,670	23,496	500	29,667	7.8	44,811	11.8
2035	378,607	4.0	15,144	0	3.0	0	15,144	5,897	24,436	500	30,833	8.1	45,978	12.1
2036	378,607	4.0	15,144	0	3.0	0	15,144	6,133	25,413	500	32,047	8.5	47,191	12.5
2037	378,607	4.0	15,144	0	3.0	0	15,144	6,378	26,430	500	33,308	8.8	48,453	12.8
16,027,515			0				633,639	144,263	597,781	26,000	768,044		1,401,683	

Loan Principal (\$1000's) \$196,000
 Inflation Rate 4.00%
 Internal Rate of Return (IRR) 6.10%
 Case Number HC-2

30-Apr-85

H2-2																	ACTUAL
BASELOAD				ADDITIONAL			TOTAL	OPERATIONS & MAINTENANCE					TOTAL	RATE			
YEAR	SALES (MWH)	RATE (CENTS/KWH)	REVENUE (\$1000'S)	SALES (MWH)	RATE (CENTS/KWH)	REVENUE (\$1000'S)	DEBT SVC (\$1000'S)	ADMIN (\$1000'S)	ON-SITE (\$1000'S)	R & R (\$1000'S)	TOTAL (\$1000'S)	RATE (CENTS/KWH)	COST (\$1000'S)	REQUIRED (CENTS/KWH)	YEAR		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
1986	181,496	2.6	4,719	10,828	1.6	173	4,892	863	3,576	500	4,939	2.6	9,831	5.1	1986		
1987	191,417	2.8	5,360	21,655	1.8	390	5,750	898	3,719	500	5,117	2.4	10,867	5.1	1987		
1988	199,181	3.2	6,374	32,484	2.2	715	7,089	923	3,868	500	5,301	2.3	12,390	5.3	1988		
1989	206,042	3.5	7,211	42,312	2.5	1,050	8,269	971	4,023	500	5,493	2.2	13,763	5.5	1989		
1990	212,954	4.0	8,520	54,140	3.0	1,624	10,144	1,010	4,183	500	5,693	2.1	15,837	5.9	1990		
1991	219,037	4.0	8,763	54,140	3.0	1,624	10,387	1,050	4,251	500	5,901	2.2	16,288	6.0	1991		
1992	226,907	4.0	9,076	54,140	3.0	1,624	10,700	1,092	4,325	500	6,117	2.2	16,817	6.0	1992		
1993	236,183	4.0	9,447	54,140	3.0	1,624	11,072	1,136	4,406	500	6,241	2.2	17,413	6.0	1993		
1994	245,893	4.0	9,816	54,140	3.0	1,624	11,460	1,181	4,894	500	6,575	2.2	18,035	6.0	1994		
1995	255,439	4.0	10,218	54,140	3.0	1,624	11,842	1,228	5,090	500	6,818	2.2	18,660	6.0	1995		
1996	260,533	4.0	10,421	54,140	3.0	1,624	12,046	1,277	5,297	500	7,071	2.2	19,116	6.1	1996		
1997	265,897	4.0	10,636	54,140	3.0	1,624	12,260	1,329	5,505	500	7,324	2.3	19,584	6.1	1997		
1998	271,482	4.0	10,859	54,140	3.0	1,624	12,483	1,382	5,725	500	7,607	2.3	20,090	6.2	1998		
1999	277,343	4.0	11,094	54,140	3.0	1,624	12,718	1,437	5,954	500	7,891	2.4	20,609	6.2	1999		
2000	283,458	4.0	11,340	54,140	3.0	1,624	12,964	1,494	6,192	500	8,187	2.4	21,151	6.3	2000		
2001	288,220	4.0	11,529	54,140	3.0	1,624	13,153	1,554	6,440	500	8,494	2.5	21,647	6.3	2001		
2002	290,043	4.0	11,602	54,140	3.0	1,624	13,226	1,616	6,698	500	8,814	2.6	22,040	6.4	2002		
2003	291,926	4.0	11,677	54,140	3.0	1,624	13,301	1,681	6,966	500	9,147	2.6	22,448	6.5	2003		
2004	293,889	4.0	11,756	54,140	3.0	1,624	13,380	1,748	7,244	500	9,493	2.7	22,872	6.6	2004		
2005	295,935	4.0	11,837	54,140	3.0	1,624	13,462	1,818	7,534	500	9,852	2.8	23,314	6.7	2005		
2006	298,067	4.0	11,923	54,140	3.0	1,624	13,547	1,891	7,835	500	10,226	2.9	23,773	6.7	2006		
2007	300,290	4.0	12,012	54,140	3.0	1,624	13,636	1,967	8,149	500	10,615	3.0	24,251	6.8	2007		
2008	302,608	4.0	12,104	54,140	3.0	1,624	13,729	2,045	8,475	500	11,020	3.1	24,746	6.9	2008		
2009	305,023	4.0	12,201	54,140	3.0	1,624	13,825	2,127	8,814	500	11,441	3.2	25,266	7.0	2009		
2010	307,541	4.0	12,302	54,140	3.0	1,624	13,926	2,212	9,166	500	11,879	3.3	25,804	7.1	2010		
2011	310,155	4.0	12,407	54,140	3.0	1,624	14,031	2,301	9,533	500	12,334	3.4	26,364	7.2	2011		
2012	312,901	4.0	12,516	54,140	3.0	1,624	14,140	2,393	9,914	500	12,807	3.5	26,947	7.3	2012		
2013	315,753	4.0	12,630	54,140	3.0	1,624	14,254	2,488	10,311	500	13,299	3.6	27,554	7.4	2013		
2014	318,725	4.0	12,749	54,140	3.0	1,624	14,373	2,588	10,723	500	13,811	3.7	28,184	7.6	2014		
2015	321,824	4.0	12,873	54,140	3.0	1,624	14,497	2,691	11,152	500	14,344	3.8	28,841	7.7	2015		
2016	325,053	4.0	13,002	53,554	3.0	1,607	14,609	2,799	11,598	500	14,897	3.9	29,506	7.8	2016		
2017	328,429	4.0	13,137	50,187	3.0	1,506	14,642	2,911	12,062	500	15,473	4.1	30,116	8.0	2017		
2018	331,529	4.0	13,277	46,678	3.0	1,400	14,578	3,027	12,545	500	16,072	4.2	30,750	8.1	2018		
2019	335,567	4.0	13,423	43,020	3.0	1,291	14,714	3,149	13,047	500	16,695	4.4	31,419	8.3	2019		
2020	339,470	4.0	13,576	39,207	3.0	1,176	14,752	3,274	13,568	500	17,343	4.6	32,095	8.5	2020		
2021	343,275	4.0	13,735	35,232	3.0	1,057	14,792	3,405	14,111	500	18,017	4.8	32,800	8.7	2021		
2022	347,518	4.0	13,901	31,009	3.0	923	14,833	3,542	14,676	500	18,717	4.9	33,551	8.9	2022		
2023	351,816	4.0	14,073	26,771	3.0	803	14,877	3,683	15,263	500	19,443	5.1	34,323	9.1	2023		
2024	356,308	4.0	14,254	22,269	3.0	668	14,922	3,831	15,873	500	20,204	5.3	35,126	9.3	2024		
2025	361,030	4.0	14,441	17,577	3.0	527	14,969	3,984	16,516	500	20,992	5.5	35,941	9.5	2025		
2026	365,921	4.0	14,637	12,686	3.0	381	15,017	4,143	17,168	500	21,812	5.7	36,809	9.7	2026		
2027	371,619	4.0	14,841	7,539	3.0	228	15,068	4,309	17,855	500	22,664	6.0	37,722	10.0	2027		
2028	376,354	4.0	15,053	2,273	3.0	68	15,122	4,481	18,569	500	23,551	6.2	38,672	10.2	2028		
2029	381,607	4.0	15,144	0	3.0	0	15,144	4,661	19,312	500	24,473	6.5	39,617	10.5	2029		
2030	387,607	4.0	15,144	0	3.0	0	15,144	4,847	20,085	500	25,432	6.7	40,516	10.7	2030		
2031	393,607	4.0	15,144	0	3.0	0	15,144	5,041	20,898	500	26,429	7.0	41,573	11.0	2031		
2032	398,607	4.0	15,144	0	3.0	0	15,144	5,243	21,724	500	27,456	7.3	42,110	11.3	2032		
2033	398,607	4.0	15,144	0	3.0	0	15,144	5,452	22,593	500	28,545	7.5	42,639	11.5	2033		
2034	398,607	4.0	15,144	0	3.0	0	15,144	5,670	23,496	500	29,687	7.8	43,111	11.8	2034		
2035	398,607	4.0	15,144	0	3.0	0	15,144	5,897	24,436	500	30,833	8.1	43,978	12.1	2035		
2036	398,607	4.0	15,144	0	3.0	0	15,144	6,133	25,413	500	32,047	8.5	47,191	12.5	2036		
2037	398,607	4.0	15,144	0	3.0	0	15,144	6,378	26,430	500	33,308	8.8	48,453	12.8	2037		
16,027,515			1,903,051			689,847			144,263	597,781	26,000	768,044	1,457,892				

Alaska State Legislature



House of Representatives

REPRESENTATIVE
JOHN L. SUNO

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CHIEF HOUSE SPECIAL COMMITTEE ON LOANS
VICE-CHAIR JUDICIARY COMMITTEE
MEMBER SPECIAL COMMITTEE ON OIL AND GAS
MEMBER RESOURCES COMMITTEE

4/22/85

MEMORANDUM

TO: Sen. Arliss Sturgulewski, Chair,
Senate Resources Committee

FROM: Rep. John Suno

RE: HB 219 "An act relating to the applicability of the Alaska Public Utilities Commission Act to certain electric utilities; power development loans; and the energy program for Alaska."

The purpose of this bill is to resolve the problems holding up four-dam-pool power sales agreements and to provide for payback of the \$196 million appropriation made last year to complete the hydroelectric projects. The Alaska Power Authority and the six communities served by the four dams have been negotiating power sales agreements for 2½ years without success. The goal is a long-term power sales agreement that provides affordable electricity for the communities and a maximum return on the state's investment.

\$210 million was appropriated last year; \$196 million has been spent to complete the dams and pay off short-term construction financing issued by the APA. This appropriation was structured as a loan from the Department of Commerce and Economic Development to the APA to be paid off through power sales from the project. AS 44.33.620 sets terms for the loan.

As in existing law, the Finance Committee Substitute does not set in law exact terms for the loan, nor does it set power rates. These are left open for further negotiation. The bill provides specific guidelines for resolving the issue under a plan developed by Gordon Harrison of the APA board.

The APA and the six communities report recent significant progress in power sales agreement negotiations; the plan they are now working with requires the passage of CSHB 219 (Fin). Action is required this session to permit sales agreements which will capture additional loads for the under-utilized hydroelectric capacity.

The bill is supported by both the APA and the four-dam-pool communities. Bob Heath, Executive Director of the APA and representatives of the communities are expected to testify before the Resources Committee.

Sectional analysis:

Section 1:

Sections 1 and 5, propose a change in law to allow two communities to get together for joint operation of a dam. The main purpose is to allow the Thomas Bay Power Authority to operate the Tyee Dam. Tyee serves two communities (Wrangell and Petersburg); Current law requires one or the other to operate the dam. This section corrects that by adding "electric operating entities established as an instrumentality of two or more public utilities owned and operated by a political subdivision of the state" to the APUC statutes. Like the communities, the 'joint operating entity' would not be subject to APUC regulation.

Section 2:

This section amends the loan terms for the Power Development Revolving Loan Fund (AS 44.33.620). This fund was created last session and the statutory loan terms give little direction to the APA. The added language sets clear guidelines for the agencies to work with. Deleted is the requirement that the loan terms be set considering market rates of interest.

Section 3 adds a definition: "initial project" means the four dams.

Section 4 adds a provision for power sales contract rate reopeners. This protects the state in times of inflation when the power sales rate could not provide sufficient loan repayment in real terms and protects the communities should the price of alternate power generation drop significantly. An important provision is added allowing an agreed schedule of wholesale power rates to be included in the contracts. This allows a contract to be reached through negotiation which will provide for certainty in power rates as needed by utility planners. This also will provide for a greater return to the state in debt service from the project.

Section 5 adds joint operating entities to the definition of "qualified utilities" which may purchase power from the APA. (See explanation of Section 1)

RETAIL RATES
(cents per kwh)

<u>Community</u>	<u>@ 200 kwh/month</u>	<u>@ 500 kwh/month</u>	<u>@ 700 kwh/month</u>
Copper Valley			
-Glenallen	23.5	20.1	18.8
-Valdez	21.3	16.0	14.7
Kodiak	19.0	18.1	17.5
Wrangell	19.1	16.3	15.7
Petersburg	13.9	11.7	11.2
Ketchikan	14.3	10.8	10.2

COMPONENTS OF THE RATES
(cents per kwh)

<u>Community</u>	<u>APA O&M</u>	<u>APA Debt Service</u>	<u>Other</u> ^{*/}	<u>Total (@ 700 kwh/month)</u>
Copper Valley				
-Glenallen	2.76	2.64	13.4	18.8
-Valdez	2.76	2.64	9.3	14.7
Kodiak	2.00	2.64	12.86	17.5
Wrangell	4.59	2.64	8.47	15.7
Petersburg	4.59	2.64	3.97	11.2
Ketchikan	2.26	2.64	5.3	10.2

^{*/} "Other" includes distribution, administrative and general, reserve generation, and other generation (other hydro as well as diesel in the case of Ketchikan and Petersburg.)

Draft: April 23, 1985

SHORTCOMINGS OF PRICING APA POWER AS A PERCENTAGE OF AVOIDED COST

A. Problems for the purchasing utility (in the Alaskan context)^{*/}

1. Loss of potential loads: Some or all potential large new loads that could increase project utilization will be lost, because such loads demand a higher degree of certainty over longer periods. Many such loads will either be met with private generation or cogeneration (e.g., Wrangell Forest Products) or will be lost entirely (e.g., Phillips). In the cogeneration case, the utility may be required by law to purchase ~~excess~~ cogenerated power from the private party, thus reducing the utility's own purchases from the APA project. In the case of loads lost because the economic activity is relocated (e.g., to the Lower 48), the community loses not only employment and taxes, but also the "induced" loads, i.e., increases in other community loads resulting from the economic activity represented by the primary load.

2. Ratemaking and billing problems: The utility must make its retail rates prospectively, yet its power costs will become known only retrospectively. Matching costs to rates during each rate period (and keeping rates fairly predictable for consumers), always a chore, becomes significantly more difficult.

3. Added administrative costs: A fairly sophisticated formula is needed to calculate true avoided cost, and the values for each variable in the formula must be recalculated at frequent (e.g., monthly) intervals. This would create some administrative burden even if (a) diesel were the only alternative, and (b) disputes with APA over the proper value for each variable never arose. (It is also difficult to continue getting realistic quotes for a large volume of diesel once the utility begins buying reduced volumes.) In practice, the difficulties are even greater because (a) the formula must accommodate other alternatives (e.g., cogeneration) as such alternatives become available, and (b) disputes with the APA over the value of individual variables are likely.

^{*/} Such pricing works well in power "pools" in which a sophisticated computer controls the generators of many producers on an instantaneous central-dispatch basis. The computer is programed to minimize total generation costs at all times, based on each generator's fuel cost, efficiency, and maximum/minimum operating guides. Cost savings made possible by using Utility A's generator rather than Utility B's to serve a portion of Utility B's load are "split" (usually on a 50/50 basis) through use of a share-the-savings rate the computer charges to Utility B and credits to Utility A. The actual rate for each transaction, and each utility's costs and savings for any given period, are known at once, facilitating utility ratemaking and billing. Nothing similar exists in Alaska, nor could it exist in the Four Dam Pool context where (a) the communities are not electrically interconnected, and (b) APA power is intended to displace thermal generation completely for most days of the year.

AMENDMENT

TO: "Discussion Draft" HB 219

Page 2, Line 23:

Replace Section 4 with:

* Sec. 4. AS 44.33 is amended by adding a new section to read:

Sec. 44.33.⁶²⁵~~33~~. RATE REOPENERS. A power sales agreement for the sale of power from the initial project financed with a loan under AS 44.33.610 may include among its provisions an agreed schedule of wholesale power rates notwithstanding the provisions of AS 44.83.398 but must include a provision for a rate reopener, ~~after the first 15 years.~~

AMENDMENT

TO: HB 219

Page 2, Line 21:

Add a new section:

* Sec. 4. AS 44.33 is amended by adding a new section to read:

Sec. 44.33.33. ^{OK} ~~PRICE~~ ^{RATE} REOPENERS. A power sales agreement for the sale of power from a power project financed with a loan under AS 44.33.610 ⁶²⁵ may include among its provisions an agreed schedule of wholesale power rates notwithstanding any other provisions of law and must include a provision for a ^{RATE} ~~price~~ reopener after the first 15 years. ^{44.33.610} ^{44.33.398}

Renumber following sections accordingly

① All APA

②