Q. (Re: p.10 – Non-firm Rates)

(a) Please show how the 56% increase on line 10, p. 10, is calculated.

(b) Does the increase reflect the RSP adjustment for 2001 and 2002? If not, recalculate the increase with the RSP adjustments.

(c) What percentage increase in cost per tonne of newsprint is the change in non-firm rates to each of the ACI paper mills in Newfoundland? Please include the RSP impact for 2002 on the existing Interruptible rates if they were to continue.

(d) With the implementation of the power purchase agreement in 2003 for incremental generation on the Exploits River, please estimate how often Generation Outage Demand will be required by ACI and how it will change from the current circumstances in terms of energy, power demands and costs.

(e) What will the cost be to ACI assuming a one day outage is planned to number 4 generator at Grand Falls in 2002 with No. 6 fuel costing $28.00 per barrel, assuming current rate structure and the proposed rate structure? What will the cost to ACI be under each rate structure if the change was a forced outage? Please show the percent change for each scenario.

(f) In 2000, ACI-Stephenville took Interruptible "A" at an average monthly load factor of approximately 25%. Assuming an industrial customer is taking 1,000 kW of Interruptible "A" at load factors of 10, 25, 40, 65 and 80% and the cost of fuel is $28/bbl, show the cost and the percent difference in cost to the customer at each load factor using the current rate structure for Interruptible "A" including the current RSP adjustment, the current rate structure for Interruptible "A" with the proposed firm rates and forecast 2002 RSP adjustment, and the proposed Interruptible rate structure and rates. Please show your calculations.

(g) Explain why the proposed rate as referred to on line 13 of p. 10 of the evidence of Melvin Dean is prohibitive.

A. (a) see Table attached on page 4 of this Answer.

(b) the increase referred to in NLH15(a) does not reflect the RSP adjustment for 2001 and 2002. The recalculated increase is shown on the Table on page 5 of this Answer.

(c) the Interruptible "A" rate will not increase the cost per tonne of newsprint for the Stephenville Mill in 2002. A high increase in the rate would result in ACI-Stephenville using more firm power and less Interruptible "A" power. An increase in the Interruptible "A" rate has the effect of reducing the Mill's flexibility when going through periods of operational change. This would in turn lead to additional costs.

Hydro's proposed non-firm power incorporates the existing Interruptible "A" Power, Emergency Power and Exceptional Power used at ACI-Grand Falls. The main use of non-firm power at ACI-Grand Falls is for generation outage. It is not possible to predict the number of generator failures or the duration of these failures with any accuracy.

Grand Falls uses very little Interruptible "A" Power, so the impact on this power block in minimal.

The Emergency Power will have the biggest possible cost to ACI-Grand Falls due to the method of calculating the demand, i.e., the number of days in which non-firm power was taken multiplied by the maximum non-firm demand for the month. Given the large range in the Grand Falls generation output, this could be a costly rate. Exact costs or impact on costs per tonne cannot be accurately estimated as it depends on the number of generator outages and duration.

(d) With the implementation of the power purchase agreement in 2003 for incremental generation on the Exploits River, the need for Generation Outage Demand required by ACI Grand Falls will be greatly reduced. Barring a double contingency for forced outages, the only circumstance would be if #4 generator at Grand Falls was forced down. This would leave us 2.5 MW short. Generation Outage Demand could also be used for a plugged river (ice) or low water in storage at Red Indian Lake. While the frequency of use for Generation Outage Demand will be reduced due to the peaking capacity at Grand Falls and Bishop's Falls, the costs incurred when it will be used is higher due to the Demand charge. The energy rate will be the same as is currently charged for Emergency (Bunker C or gas turbine).

The amount of Generation Outage Demand requested for low reservoir levels in Red Indian Lake will not change due to having more generating capacity. The impact that the proposed rate will have will depend largely on the load factor for the demand taken.

Again, this cost will be higher since in the past Hydro would extend the Interruptible "A" beyond the 5 MW cap to the required level to make up the shortfall in ACI's generation. While the demand charge for Generation Outage is lower, the energy charge will be higher. It will depend largely on the load factor for the demand taken.

e) Forced Outage

See the attached Tables at pp. 6 and 7 of this Answer for the costs of a one day planned outage and forced outage on No. 4 Generator.

It is important to note that if there had been Generation Outage Demand taken in this month prior to or after this particular outage for one of the smaller generators then the total cost for the month would be much larger.

(f) the requested information and calculations are shown on pp. 8 through 12 of this Answer.

(g) with a load factor of 89%, the increase in the rate would be 56%. An increase of this amount would result in ACI-Stephenville using firm power instead of non-firm power.

COMPARISON FIRM & INTERRUPTIBLE 'A' RATE		
Operating Data		
Demand (mw)	1	
Load factor (%) *1	89%	
Energy (mwh / year)	7,796	
Rate Component	**Firm Power**	**Interruptible 'A'**
Fuel Cost ($ / bbl)	N/A	$ 28.00
Surcharge (% of fuel)	N/A	10%
Fuel Efficiency (mwh / bbl)	N/A	0.610
Energy Rate ($ / mwh)	$ 23.09	$ 50.49
Demand rate ($ / mw / mth)	$ 7,010	$ 1,500
Annual Demand Cost ($)	$ 84,120	$ 18,000
Annual Energy Cost ($)	$ 180,019	$ 393,654
Total Cost ($)	$ 264,139	$ 411,654
Average cost ($ / mwh)	**$ 33.88**	**$ 52.80**
Increase in rate (%)		**56%**

NOTE:
*1 89% was annual load factor for ACI-Stephenville in 2000.

COMPARISON FIRM & INTERRUPTIBLE 'A' RATE (with RSP)		
Operating Data		
Demand (mw)	1	
Load factor (%) *1	89.0%	
Energy (mwh / year)	7,796	
Rate Component	Firm Power	Interruptible 'A'
Fuel Cost ($ / bbl)	N/A	$ 28.00
Surcharge (% of fuel)	N/A	10%
Fuel Efficiency (mwh / bbl)	N/A	0.610
Energy Rate ($ / mwh)	$ 23.09	$ 50.49
Demand rate ($ / mw / mth)	$ 7,010	$ 1,500
RSP Adjustment ($ / mwh) *2	$ 5.58	N/A
Annual Demand Cost ($)	$ 84,120	$ 18,000
Annual Energy Cost ($)	$ 180,019	$ 393,654
Annual RSP Cost ($)	$ 43,504	N/A
Total Cost ($)	$ 307,643	$ 411,654
Average cost ($ / mwh)	**$ 39.46**	**$ 52.80**
Increase in rate (%)		**34%**

NOTE:
*1 89% was annual load factor for ACI-Stephenville in 2000.
*2 RSP rate from IC-132.

NLH-9(e) -NO. 4 GENERATOR PLANNED OUTAGE				
Operating Data				
Demand (kw)		29,500		
Hours of outage		24		
Energy (kwh / day)		708,000		
Rate Component	Existing Structure		Proposed Rate	
Base Rate ($ / kwh)	$	0.015		N/A
Base Fuel Price ($ / bbl)	$	7.50		N/A
Fuel Cost ($ / bbl)	$	28.00	$	28.00
Surcharge (% of fuel)		N/A		10%
Fuel Efficiency (kwh / bbl)		N/A		610
Energy Rate ($ / kwh)	$	0.0560	$	0.0505
Demand rate ($ / kw / mth)	$	7.01	$	1.50
Demand Cost ($)	$	6,893	$	1,475
Energy Cost ($)	$	39,648	$	35,748
Total Cost ($)	$	46,541	$	37,223
Increase in rate (%)				-20%

NLH-9(e) -NO. 4 GENERATOR FORCED OUTAGE				
Operating Data				
Demand (kw)		29,500		
Hours of outage		24		
Energy (kwh / day)		708,000		
Rate Component	Existing Structure		Proposed Rate	
Base Rate ($ / kwh)	$	0.015		N/A
Base Fuel Price ($ / bbl)	$	7.50		N/A
Fuel Cost ($ / bbl)	$	28.00	$	28.00
Surcharge (% of fuel)		N/A		10%
Fuel Efficiency (kwh / bbl)		N/A		610
Energy Rate ($ / kwh)	$	0.0560	$	0.0505
Demand rate ($ / kw / mth)	$	-	$	1.50
Demand Cost ($)	$	-	$	1,475
Energy Cost ($)	$	39,648	$	35,748
Total Cost ($)	$	39,648	$	37,223
Increase in rate (%)				-6%

NLH-15(f) Interruptible "A" Rate Comparison at 10% Load Factor			
	Current Interruptible "A" Rate Structure at 2001 Actual Rates	Current Interruptible "A" Rate Structure at 2002 Proposed Rates	Proposed Interruptible "A" Rate Structure and Rates
Operating Parameter			
Load Factor (%)	10%	10%	10%
Interruptible "A" (kW)	1000	1000	1000
Energy Consumption (kWh)	74,400	74,400	74,400
Rates			
Demand Rate ($/kW/mth)	7.36	7.01	1.50
Base Energy Rate ($/kWh)	0.01934	0.02309	N/A
RSP ($/kWh)	0.00280	0.00558	N/A
No. 6 Fuel ($/bbl)	N/A	N/A	28.00
Holyrood Effic. (kWh/bbl)	N/A	N/A	610
Fuel Cost ($/kWh)	N/A	N/A	0.04590
Fuel + 10% admin. ($/kWh)	N/A	N/A	0.05049
Costs			
Demand Cost ($)	7360.00	7010.00	1500.00
Energy Cost ($)	1438.90	1717.90	3,756.59
RSP Adjustment ($)	208.32	415.15	0
Total Cost ($)	9007.22	9143.05	5256.59
Difference in Cost (%)	0.0%	1.5%	-41.6%

NLH-15(f) Interruptible "A" Rate Comparison at 25% Load Factor			
	Current Interruptible "A" Rate Structure at 2001 Actual Rates	Current Interruptible "A" Rate Structure at 2002 Proposed Rates	Proposed Interruptible "A" Rate Structure and Rates
Operating Parameter			
Load Factor (%)	25%	25%	25%
Interruptible "A" (kW)	1000	1000	1000
Energy Consumption (kWh)	186,000	186,000	186,000
Rates			
Demand Rate ($/kW/mth)	7.36	7.01	1.50
Base Energy Rate ($/kWh)	0.01934	0.02309	N/A
RSP ($/kWh)	0.00280	0.00558	N/A
No. 6 Fuel ($/bbl)	N/A	N/A	28.00
Holyrood Effic. (kWh/bbl)	N/A	N/A	610
Fuel Cost ($/kWh)	N/A	N/A	0.04590
Fuel + 10% admin. ($/kWh)	N/A	N/A	0.05049
Costs			
Demand Cost ($)	7360.00	7010.00	1500.00
Energy Cost ($)	3597.24	4294.74	9,391.48
RSP Adjustment ($)	520.80	1037.88	0
Total Cost ($)	11,478.04	12,342.62	10,891.48
Difference in Cost (%)	0.0%	7.5%	-5.1%

NLH-15(f) Interruptible "A" Rate Comparison at 40% Load Factor			
	Current Interruptible "A" Rate Structure at 2001 Actual Rates	Current Interruptible "A" Rate Structure at 2002 Proposed Rates	Proposed Interruptible "A" Rate Structure and Rates
Operating Parameter			
Load Factor (%)	40%	40%	40%
Interruptible "A" (kW)	1000	1000	1000
Energy Consumption (kWh)	297,600	297,600	297,600
Rates			
Demand Rate ($/kW/mth)	7.36	7.01	1.50
Base Energy Rate ($/kWh)	0.01934	0.02309	N/A
RSP ($/kWh)	0.00280	0.00558	N/A
No. 6 Fuel ($/bbl)	N/A	N/A	28.00
Holyrood Effic. (kWh/bbl)	N/A	N/A	610
Fuel Cost ($/kWh)	N/A	N/A	0.04590
Fuel + 10% admin. ($/kWh)	N/A	N/A	0.05049
Costs			
Demand Cost ($)	7360.00	7010.00	1500.00
Energy Cost ($)	5755.58	6871.58	15,026.36
RSP Adjustment ($)	833.28	1660.61	0
Total Cost ($)	13,948.86	15,542.19	16,526.36
Difference in Cost (%)	0.0%	11.4%	18.5%

NLH-15(f) Interruptible "A" Rate Comparison at 65% Load Factor			
	Current Interruptible "A" Rate Structure at 2001 Actual Rates	Current Interruptible "A" Rate Structure at 2002 Proposed Rates	Proposed Interruptible "A" Rate Structure and Rates
Operating Parameter			
Load Factor (%)	65%	65%	65%
Interruptible "A" (kW)	1000	1000	1000
Energy Consumption (kWh)	483,600	483,600	483,600
Rates			
Demand Rate ($/kW/mth)	7.36	7.01	1.50
Base Energy Rate ($/kWh)	0.01934	0.02309	N/A
RSP ($/kWh)	0.00280	0.00558	N/A
No. 6 Fuel ($/bbl)	N/A	N/A	28.00
Holyrood Effic. (kWh/bbl)	N/A	N/A	610
Fuel Cost ($/kWh)	N/A	N/A	0.04590
Fuel + 10% admin. ($/kWh)	N/A	N/A	0.05049
Costs			
Demand Cost ($)	7360.00	7010.00	1500.00
Energy Cost ($)	9352.82	11166.32	24,417.84
RSP Adjustment ($)	1354.08	2698.49	0
Total Cost ($)	18,066.90	20,874.81	25,917.84
Difference in Cost (%)	0.0%	15.5%	43.5%

NLH-15(f) Interruptible "A" Rate Comparison at 80% Load Factor			
	Current Interruptible "A" Rate Structure at 2001 Actual Rates	Current Interruptible "A" Rate Structure at 2002 Proposed Rates	Proposed Interruptible "A" Rate Structure and Rates
Operating Parameter			
Load Factor (%)	80%	80%	80%
Interruptible "A" (kW)	1000	1000	1000
Energy Consumption (kWh)	595,200	595,200	595,200
Rates			
Demand Rate ($/kW/mth)	7.36	7.01	1.50
Base Energy Rate ($/kWh)	0.01934	0.02309	N/A
RSP ($/kWh)	0.00280	0.00558	N/A
No. 6 Fuel ($/bbl)	N/A	N/A	28.00
Holyrood Effic. (kWh/bbl)	N/A	N/A	610
Fuel Cost ($/kWh)	N/A	N/A	0.04590
Fuel + 10% admin. ($/kWh)	N/A	N/A	0.05049
Costs			
Demand Cost ($)	7360.00	7010.00	1500.00
Energy Cost ($)	11511.17	13743.17	30,052.72
RSP Adjustment ($)	1666.56	3321.22	0
Total Cost ($)	20,537.73	24,074.38	31,552.72
Difference in Cost (%)	0.0%	17.2%	53.6%