NEWFOUNDLAND BOARD OF PUBLIC UTILITIES
DATA RESPONSES
TO
INDUSTRIAL CUSTOMERS

IC 274. With reference to J.W. Wilson's evidence on page 36 and 37, where he states "assuming the same energy charge for interruptible usage as for firm industrial (2.309 cents/kwh), an interruptible customer with a 50% load factor would pay 2.72 cents per kWh (the price with an 80% load factor would be 2.56 cents) versus 4.80 cents per kWh for firm service to NP (or 4.23 cents per kWh for a firm industrial with a 50% load factor.).:

a. For the assumed energy rate of 2.309 cents per kWh, what would be the necessary price for No. 6 fuel ($C/barrel) in order for this assumption to be true?

b. Redo the calculation for 50% and 80% load factor based on the cost of service price of $28 per barrel for No. 6 fuel.

RESPONSE:

a. No particular oil price was assumed. The only assumptions in this hypothetical were (1) a 50% load factor, and (2) an interruptible energy rate equal to the firm energy rate (2.309¢ per kWh).

Using the Industrial Non-Firm tariff formula as provided in the filing Schedule A at page 3 of 27:

> "Non-Firm Energy is deemed to be supplied from thermal sources. The following shall apply to calculate the Non-Firm Energy rate:
>
> $$\{(A \div B) \times (1 + C)\} \times 100$$
>
> A= the monthly average cost of fuel per barrel for the energy source in the current month or, in the month the source was last used
>
> B= the conversion factor for the source used (kWh/bbl)
>
> C= the administrative and variable operating and maintenance charge (10%)
>
> The energy sources and associated conversion factors are:
>
> 1. Holyrood, using No. 6 fuel with a conversion factor of 610 kWh/bbl
> 2. Gas turbines using No. 2 fuel with a conversion factor of 475 kWh/bbl
> 3. Diesels using No. 2 fuel with a conversion factor of 556 kWh/bbl."

Thus, applying this formula yields:

$$(A \div 610) \times 1.1 \times 100 = 2.309 \text{ cents}$$

$$110A = 2.309 \times 610$$

$$A = \$12.80445$$

b. Dr. Wilson has made no calculations of energy rates based on oil prices. He does agree that cost reflective energy rates (both firm and interruptible) should be expected to be higher with high oil

prices than with low oil prices. They would also be higher with low fuel conversion efficiency (kWh per barrel) than with high efficiency.

By using the tariff formula described above:

$$(28 \div 610) \times 110 = 5.049 \text{ cents per kWh}$$

With a 50% load factor, the demand charge is .411 cents per kWh, so the cost would be 5.46 cents per kWh.

With an 80% load factor, the cost would be 5.306 cents per kWh.