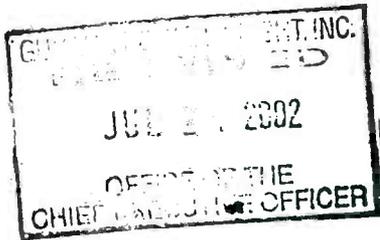


PUBLIC UTILITIES COMMISSION



In the matter of a hearing by the Public Utilities Commission on its own motion with respect to the quality of service provided by Guyana Power and Light Inc

Justice Prem Persaud

Mr. John Willems

Mr. Hugh George

Mr. Badrie Persaud

Mr. Allan Wilson

Ms. Jennifer Ganpatsingh

Mr. Anthony Nurse

- Chairman

- Member

- Member

- Member

- Legal Officer

- Financial Analyst

- Secretary

This is the document marked "C" referred to in the Affidavit of

Philip Jacques
sworn to Before Me on the 15th day
of August, 2002

Notary Public
A Commissioner for Oaths

Guyana Power and Light Inc

Mr. M.G. Fitzpatrick S.C. Attorney-at-Law

Mr. Timothy Jonas, Attorney-at-Law

Guyana Consumers Advisory Bureau

&

Guyana Consumers Association

Mr. Steven Fraser, Attorney-at-Law

Report On Investigation Into GPL's Service And Findings

In the 1990's the Government of Guyana decided to remove itself as the sole operator in the power sector because it became clear that substantial capital investment and the necessary experience and expertise were required for its continued improvement. A strategic investor was brought in and culminated with the sale of the sector to a consortium the CDC/ESBI, headquartered in Ireland, of fifty percent (50%) of the shares of a new company, the Guyana Power and Light (**GPL**) in which the Government vested the assets and operations of the Guyana Electricity Corporation (GEC), and retained a fifty percent (50%) ownership interest in GPL.

Various pieces of legislation were promulgated which established a regulatory framework to govern the newly restructured power sector. These are: Electricity Sector Reform Act No. 11 of 1999 (**ESRA**); The Public Utilities Commission Act No. 10 of 1999 (**PUC Act**), the Guyana Energy Agency Act 1997 (**GEAA**). GPL is a public utility within the meaning of Section 4 of the PUC Act.

Under the current system of assignment of Ministerial responsibilities the Prime Minister is the Minister responsible under the three Acts. The PUC is the agency responsible for regulating public utilities, but the Prime Minister is assigned a significant role in the electricity sector regulatory framework in the country.

Selected provisions of the three heretofore mentioned Acts grant the Minister the authority and flexibility to utilize the PUC and the GEA in advisory roles in executing assigned regulatory functions and to coordinate with these entities in implementing the structure established here.

We cannot but emphasize that the Public Utilities Commission, being an independent regulatory authority, **has no role in the formulation of Government's policy.**

GPL was granted a licence effective from 1st October 1999 with respect to the activities and services, to wit, the **generation** of electricity, except the generation of electricity through hydropower, which was a non-exclusive licence for 25 years; and with respect to transmission, distribution, storage, furnishing, sale and the purchase of electricity, such purchase to be in accordance with power purchase agreements between GPL and independent power producers; the supply, erection, maintenance, repair, removal, replacement and operation of meters, electric lines and other electric apparatus, installation and facilities necessary to carry out the activities and services authorised by the licence; the use and rental of GPL's structures, wayleaves, casements, right-of way and other facilities for running or operation of telecommunication lines or other purposes being an exclusive licence for twenty-five years.

The Licence covers the whole country with the exception of Linden, and any other area in which a secondary supplier may be licensed to operate. GPL operates several smaller systems along the coastal belt, referred to as the Demerara interconnected and the Berbice interconnected systems, and separate systems at Anna Regina, Wakenaam, Leguan and Bartica.

With respect to Linden, the Linden Power Company was granted a licence in 1998 to supply electricity by generation, to the Linmine Enterprise and for resale to the community at Linden.

One proviso to the exclusive licence is that the Government, subject to certain terms and conditions, may request GPL to implement rural electrification programmes which shall give due consideration to same and negotiate in good faith the terms and

conditions, provided of course, that GPL may not unreasonably reject terms and conditions proposed by the Government.

If there can be no agreement within one hundred and eighty days of the commencement of negotiation, the Government may conclude an agreement on the same terms and conditions proposed to GPL for such programme with another public supplier.

The Minister may suspend or revoke the licence on any of the grounds following, namely, when GPL has:-

- (a) not provided consumers with a regular and efficient supply of electricity in accordance with the provision of the Act or the licence.
- (b) Contravened or failed to carry out, within a reasonable, time or discontinued, the performance of the terms or conditions of its licence;
- (c) failed to do certain other duties imposed upon it; or
- (d) committed a material violation of the Electricity Sector Reform Act No. 11 of 1999 (**ESRA**); the Public Utilities Commission Act No. 10 of 1999 (**PUC Act**); Guyana Energy Act No. 31 of 1999 (**GEA Act**); Environmental Protection Act 1996, No. 1 of 1996 (**EPA Act**), or any other applicable law or regulation of Guyana.

The licence imposes a duty on GPL to provide a universal supply of Electricity, and recognising the need to protect consumers from undue rate increases as a result of the cost of new services, it shall provide a supply to every person who requests such a supply, which supply shall be made available in accordance with the **Standard Terms and Conditions**; but nothing shall require it to supply electricity if and to the extent that it is prevented from so doing by circumstances not within its control; or that it might or would be in breach of ESRA, the regulation made thereunder or of the licence

granted to it, and it has taken all reasonable steps to prevent such breach or violation; or it is not reasonable in all the circumstances for it to be required to so do.

Standard Terms and Conditions

“Standard Terms and Conditions” sets out such terms and conditions governing the relationship between GPL and consumers and which are subject to modification from time to time. The Utility may propose amendments by filing a notice of amendment with the PUC. Included in the notice shall be notification of which customer groups are affected.

The PUC has the right to disallow the proposed amendment within 45 days of its filing. If it does not disallow it, or approves the amendment, then GPL will provide 15 days notice to the consumer after which the amendment will take effect. Notice to consumers will be by publication in the newspapers on at least 5 days during the 15 days notice period.

If during the 45 days period the PUC disallows the amendment or proposes any changes to it, then GPL shall have the right to agree on the changes with the PUC or to withdraw the proposed amendment.

The Commission has on its own motion held a public hearing on 12th March 2002 to consider Guyana Power and Light Inc.’s maintenance of its property and equipment and its impact on consumer services; the losses in the electrical system, and the outages and load shedding occurring within the system, in terms of Section 25 of the Public Utilities Commission Act.

At the hearing GPL filed its presentation headed “**Presentation to PUC – March 2002**”; setting out its case. It is a detailed document of 71 pages covering its property and Asset maintenance, Financial framework, Achievements, Tariffs, Ability to deliver,

Generation, System Control, Transmission and Distribution, Commercial achievements, Billing, Loss Reduction, Continuity of Supply.

Several members of the public including the former Chairman of GEC, Mr. Raymond Gaskin, made contributions at the hearing.

On the 16th April 2002, GPL filed a second memorandum which sought to address the concerns raised by members of the public and other issues relevant to the investigation.

After its adjournment GPL submitted a further document dated 14th May 2002 in response to a letter sent by **staff** to them dated April 19, 2002.

Section 33 of the PUC Act provides that when the Government and a public utility have entered into an agreement or where the Government and an investor have entered into an agreement, in relation to the privatisation or capitalisation of the public utility, or when the Government has issued a licence to a public utility or where a law exists, specifying:-

- (a) the rate of return the public utility or the investor is entitled to in respect of the capital invested or dedicated for providing any service; or
- (b) the principles, procedures, formulae or mechanisms on the basis of which such rate of return and, thereby, any rate charged by a public utility is to be determined or adjusted;

the Commission shall be bound by and shall give effect to such agreement, licence or law in determining the rate a public utility is entitled to demand or receive from any consumer or class of customers or generally from all consumers in relation to the service; and in the event of a conflict between such agreement or licence and any written law, the agreement or licence shall prevail.

Questions are asked and answers depend upon the construction and interpretation of the PUC Act No. 10 of 1999. Questions asked are:-

- (a) Can the PUC fix the rates charged by GPL for the consumption of electricity;
- (b) Can the PUC withhold any consent it may give for any increase in rates;
- (c) If GPL does not carry out faithfully the obligations it undertook to provide a safe, adequate, efficient, and reasonable service, what sanctions, if any, can the PUC impose to effect compliance.

① We have to determine what they undertook to do by their agreement and what were the impositions by the licence. ② We also have to examine whether sanctions may be imposed by either the agreement or licence for breach of any of the conditions therein set out. ③ Then we examine the PUC Act to see what authority is vested in the Commission to get the utility to conform and comply with their obligations, and/or to impose such sanctions that may be reasonable and appropriate, in all the circumstances.

Section 25 (1) of the PUC Act provides that

“subject to subsection (2), every public utility shall maintain its property and equipment in such condition as to enable it to provide, and shall make **every reasonable effort** to provide service to the public in all respects safe, adequate, efficient, reasonable and non-discriminatory and shall make all such repairs, changes, alterations, substitutions, extensions and improvements in or to such service as shall be necessary or proper for the accommodation and convenience of the public or as shall be necessary to incorporate, from time to time, advances in technology.

(2) Where an agreement exists between the Government and a public

utility, or an agreement for the privatisation or capitalisation of a public utility exists between the Government and an investor, or the licence granted to the public utility or a written law makes provision for the standard or quality of service, **the service provided by the public utility shall be deemed by the Commission, for the purposes of this Act to be reasonable or adequate if the aforesaid standard or quality is achieved and maintained.**

26.(1) Where the Commission, after a hearing upon its own motion or upon a complaint, finds that the service provided by a public utility is not in accordance with section 25, the Commission shall by order determine and prescribe the adequate or reasonable service to be provided by the public utility, including all such repairs, changes, alterations, extensions, substitutions or improvements and facilities as shall be reasonably necessary and proper for the accommodation and convenience of the public; and, subject to any other written law, may also direct the public utility to pay any consumer compensation for loss or damage suffered by the consumer on account of the failure of the public utility to comply with section 25.

(2) An order under subsection (1) shall specify reasonable time to comply with the same or, where the compliance is to be in stages, different times may be specified to comply with each stage.

Paragraph 12 of the Licence provides that after January 1, 2001, the First Schedule of ESRA and the First Schedule of the Licence shall govern the rates for the supply of electricity and for services at any time charged and to be charged by GPL, and the mechanisms, formulae, principles and procedures whereby such rates shall be calculated and determined for all purposes under ESRA and the PUC Act.

The First Schedule to the Licence sets out the **rates and rate adjustment mechanisms** for existing and new services. It gives the formula for the calculation of the rates.

The Commission is bound to follow the formula as set out. It seems clear that the Independent Firm of Accountants is the authority to check and verify the figures used in the calculation of the rates under the several heads. This becomes clearer when, shortly, hereafter we set out what is contained in ESRA.

If there be need for further clarification we may refer to an Office of the Prime Minister document dealing with "Minister's Guidelines to clarify the Electricity Regulatory Framework in Guyana". In the institutional profile it is there set out that the PUC has no direct role in rates, but broad authority to enforce the terms of GPL's licences.

Paragraph 5 of the First Schedule of ESRA provides for GPL to submit to the Commission an interim report certificate within 28 days after the end of each financial year, which incidentally is the 31st December, in the form prescribed in the licence containing the relevant information in relation to the operations of the Company during the year; and certifying that the interim return for that year was calculated in accordance with the Licence, together with the Company's unaudited internal management accounts.

When the interim return for any year exceeds that permitted under the allowable rate of return calculated in accordance with the licence, or if it is less, the Commission shall permit the Company to increase, or decrease the basic rates chargeable.

Paragraph 7 provides that not later than 30th April of each financial year GPL shall submit to the Commission a full set of audited accounts for the prior financial year comprising an income statement, balance sheet and a statement of change in financial position, plus accompanying notes and other statements duly approved by the Company's directors and reported on by the Company's auditors; a final return certificate which must **be compiled with reference to the Company's audited accounts; and a certificate of**

This certificate must state whether or not the independent accountants are able to certify that the return certificate is in compliance with the prescription of the licence and if not, the reasons therefor.

In the case of a Certificate of non-compliance, the Commission, upon receipt of the documentation aforesaid, shall review them and make a final determination within thirty days of such receipt as to the relevant adjustments to the basic rates, which rates must be implemented by the Company within 21 days of the receipt of the Commission's determination.

In the case of a certificate of compliance the relevant adjustments to the basic rates shall be deemed effective upon the 14th day after receipt by the Commission without the need for any determination by the Commission.

It may not be inappropriate to explain who this independent firm of accountants may be and how it is appointed. Section 11 of the 1st Schedule provides that the Commission shall, after an opportunity for the Company and any other interested party to be heard, appoint an independent firm of accountants which may be the company's independent firm of accountants for the purpose of issuing a certificate of compliance or non compliance. And upon the resignation or termination of appointment of the initial firm of independent accountants, **the replacement shall be acceptable to the Company and shall be appointed by the Commission. And the preparation of the Certificate shall be done under an agreement between the Company and the independent firm of accountants.**

The initial firm of independent accountants has resigned in 2001 and another firm, acceptable to the Company, has been appointed.

One will, of course, observe the repetition of the term "independent" in referring to the firm of accountants.

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It is not without interest to note that when the bill leading up to the passing of the PUC Act No. 10 of 1999 was presented in Parliament the then Hon. Minister of Trade, Tourism and Industry who was responsible for the Utilities explained to Parliament the intention of the legislation. He stated that –

“Because the PUCA applies to all public utilities placed under its jurisdiction, it is not possible for the PUCA itself to specify every standard and procedure governing its regulation of each public utility. To address this problem, and, thus achieve a desirable level of specificity for the regulation of each individual section (e.g. electricity, telecommunications and transportation), **the amendments bind the Commission to effectuate the more highly-specific provisions of laws, such as the ESRA, that are themselves sector-specific, in regulating the public utilities that operate in that sector. The amendments also ensure that the Commission will honour and, where the Commission’s jurisdiction applies, effectuate the terms of licences issued by the Government to public utilities and the contractual commitments made by the Government to an investor in the context of a privatisation or capitalisation of public utility (such as privatisation/capitalisation of the Guyana Electricity Corporation). By an amendment to the PUCA made in 1991, GEC was removed from the Commission’s rate-making jurisdiction. The new amendments will place the electricity sector, including Guyana Power & Light, Inc. under the Commission’s jurisdiction for all purposes covered by the PUCA, including rate-making and the enforcement of Ministerial-and Commission-approved development and expansion programmes. The amendments also provide that, in addition to the more generalised rate-making provisions of the PUCA (which apply to rate-setting for all public utilities), the Commission must follow the procedures,**

Paragraph 16 of the Licence granted to GPL Inc. and effective from October 1, 1999, states that “the licensee shall use its best efforts to implement, achieve and maintain the Operating Standards and Performance Targets in accordance with the Second Schedule of this Licence, as may be amended from time to time with the prior approval of the Minister. **The Licensee’s compliance with such standards and targets shall be deemed to satisfy all such requirements under the Act** and the PUC Act as to the matters included in the Operating Standards and Performance Targets and there shall be no requirement for approval by the Commission of the Operating Standards and Performance targets attached as the Second Schedule or as amended from time to time with the prior approval of the Minister.”

The Second Schedule to the licence provide for GPL to deal with the reduction in Commercial and Technical losses. It has set out that a significant investment in material and equipment will be required to reduce the technical losses, and a gradual but continuous reduction in losses is required. With respect to the Commercial losses GPL shall develop and apply measures that will systematically identify unauthorised connections to the distribution system as well as fraudulent and incorrect billing and collections; and they shall undertake their **best efforts to test all meters** and to replace those that are inaccurate.

GPL’s position, as we understand it, is that they are making reasonable efforts to improve the quality and service to customers and making their best efforts to reduce loss. (1)

Secondly, GPL maintain that their plans for improving the power sector are dependent on the company’s ability to raise debt financing. As they have succinctly put, **“this ability is contingent on the revenue stream provided by the tariff setting mechanism enshrined in GPL’s licence. That mechanism provides for the generation of cash to repay loan capital plus interest, and a return on investor equity. If the mechanism is undermined, directly or indirectly, the company will be** (2)

And in its presentation to the PUC in March 2002 GPL boldly asserted that, “**there is no linkage between company performances and the licence’s tariff setting arrangements.**” (3)

In a response dated 14th May 2002, the Chief Executive Officer of GPL stated that, the increases in rates have been in strict accordance with the provisions of ESRA and the Licence, which provisions were designed to enable GPL to receive a revenue stream that covers operating expenses, allow them to repay capital and interest and provide for a return to investors. (4)

The Chief Executive Officer states, however, that no return have been provided to investors. We have not been afforded a reason for this, but despite this, rates have increased because of increased operating costs and **increased investment in assets.**

Because of the formula for rates the 23% return to GPL is on assets. So where there is increased investment in assets the rates would go up.

While the Commission acknowledges that it cannot unilaterally add to or adjust the rate-setting mechanism spelled out in ESRA and other documents, it recognises that it has a duty and an obligation under the law to question figures presented to it by GPL. The integrity of the figures is crucial to any determination the Commission may make.

GPL is claiming that their due diligence was conducted against a background of unreliable data and an uncertain future. They also contend that increase in the rates have been in strict accordance with the provision of ESRA and the licence. They go on to say that these provisions were designed to enable GPL to receive a revenue stream that covers operating expenses, allowing them to repay capital and interest and to provide for a return to investors.

So it seems that all the uncertainties have been factored into ESRA and the licence and these documents have taken into account the results of the due diligence undertaken by the Strategic Investor.

GPL has complained that the strategic investor has not received any return on investment to date and chided us for not drawing any attention to this. We do not know, for we were not told, why any returns were not paid over to the investors.

GPL have also urged that the **Business plan**, attached to the licence granted to them and in other documents had acknowledged that the Government's representatives during the negotiations leading up to the signing of the agreement understood that GPL would face challenges and obstacles; The documents allowed a flexible framework to accommodate the constraints that may emerge. (5)

For instance, they agreed that all existing plant were "grandfathered". **Grandfather** plant is plant which will not need to comply with the Standards and Targets. (6)

It was also stipulated that the plan was based on the best available information concerning the operational status of the Company, its assets and liabilities, etc.; **but** recognised that the available information was deficient or suspect in many respects. It also acknowledged that the Plan and supporting plans were prepared against a background of uncertainty about future events, that variations in economic growth, the level of sales growth, full price fluctuations, exchange rate variations, availability and timing of debt funding may make it difficult to predict exactly how the future development of GPL will unfold; And, further, the financial projections for 1999 and beyond **do not represent commitments by the Company to incur the projected expenditures**; that actual expenditures will be determined at the time in the context of available financing, approved annual plans and budgets, and specific project proposals. (7)

Let us consider, then, their performance and standards.

Billing and Tariff Schedules

GPL shall from time to time publish the applicable tariffs in accordance with the tariff schedule, and will specify the category into which any customer falls. **And it is advisable that customers do acquaint themselves with the tariffs or alternate tariffs which may be available for any given usage of electricity.**

A customer may elect to have his service billed on any other rate schedule applicable to his requirement.

The Company shall provide bills on a monthly basis. The bills shall include charge for such service in accordance with the Tariffs Schedules together with any amount outstanding with respect to other services provided or work done in respect of customers service.

This monthly billing obligation may be varied with the approval of PUC, or may be relaxed due to the limitation of the Company's metering, billing and related administration system and processes or circumstances outside the reasonable control of the company.

GPL, however, has undertaken to replace the billing system it inherited. The plan is to replace it with the "Aquillium System" which GEC had previously identified. In 1999 GPL opined that while it was in the interests of all parties that the new system be implemented before that year-end, "it is impossible to guarantee that the new system can be in place in time to avoid the problems posed by the existing system".

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GPL is aware of the problems with billing but they appear to pay scant regard to this aspect. In their "Development and Expansion Programme 2002-2006" they made no

mention of the billing system, but in their submission to us in March 2002 they made passing reference to the issue by saying **“work has been undertaken to ensure that the data adequately reflects the real situation.”** This is of course 3 years after they spoke of a plan. They now set out their achievements in billing but a few examples will show that what they claim do not reflect the true position e.g.:

“1999 - Introduced new Bill format with enhanced customer service information”. They have not set out what is the format and we are not aware of this.

Rejected evidence?

“2000 - new online cash system introduced within GPL with the result that cash be updated nightly.” Their cash may be updated but that does not accrue to the benefit of the customers.

“2000 New online meter validation introduced resulting in more accurate bills to consumers”. We don’t understand what is meant by this.

“2001 Billing completed on time each month.” Billings are not completed each month and many consumers are distressed when month after month bills are issued which show outstanding amounts which were already paid.

Where is this evidence from?

We had requested GPL to reflect in the bills the fuel/foreign exchange rebate/surcharge, within the billing structure and not toward the end of the bill. Their response was that their billing system was not geared for that “The current billing does not permit the separate elements to be shown within the main body of the bill.

Bills are not accurate and consumers have complained that they are billed far in excess of what was consumed. When meters are checked against the records in the bills they show that the actual readings of the meter were less than what are set out in the bills.

Where is this evidence from?

This has been brought to the attention of GPL but we have not had any response. We provided the evidence by identified meters and consumers.

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Billing is the most important form of communication between GPL and their consumers. It is essential that a consumer must be able to understand the price signals communicated by the bills; and it is essential that an easier-to-understand system be introduced as quickly as possible.

Where is the info from?

Underlying this of course is that GPL cannot blame the consumers for illegal or wrongful acts of their employees.

The Company recently employed independent contractors to disconnect the services of consumers who were allegedly in default. These contractors operate from a list supplied to them. In many cases consumers who paid were disconnected despite their showing bills which were paid. The Contractor who may have been paid for each disconnection ignored consumers pleas and explained that they work according to the list.

Who is the info come from?

In comments dated 14th June 2002 and submitted to the Commission, GPL has acknowledged that complaints continue to arise in respect of meter reading, billing and debt collection, and that they are willing to make further improvements in those areas. Despite their efforts complaints have been received that there are duplication in the amounts owed, that no credit have been given for payments; that meter reading is not consistent and or regular, that estimated reading is the general rule rather than the exception, and there are great fluctuations in the amount claimed per month due to these estimations.

Who is the info come from?

Customers feel dissatisfied and frustrated and their perception that all is not well does not contribute to having confidence in the service provided, and facilitate a distorted view of the utility.

GPL feels that the number of complaints represents a very small percentage of the number of bills issued, but that is not a good enough reason or excuse for not providing a proper service.

Conclusion
not full
a look

In a letter dated March 2002, addressed to "Dear Customer" the Chief Executive Officer explaining the increase in rates in 2002, said:-

" a final issue is one of presentation. GPL anticipated that this would cause confusion prior to us announcing the rate increase. We were also sensitive to possible charges of mis-representation.... The tariff mechanism is extremely complex. It is difficult for those of us involved full time to be familiar with all its aspects. It is almost impossible to explain it to a general audience."

So there we have it. GPL itself is having difficulty to be familiar with the system and it is time the mechanism be revisited. It is not unreasonable to expect that GPL can make mistakes in the rate structure.

Not
a call
reported
of the air

Losses

There has been no improvement in commercial and technical losses: There are only proposals advanced by GPL which in turn are heavily dependent on the availability of funds, they claim.

Technical losses arise from transformer and line losses, and **Commercial losses** can arise from defective meters resulting in sales not recorded, administrative problem, as for example, discrepancies between field metering and information in the billing system; unauthorised or undocumented connections to the electricity system and theft of electricity.

When GPL took over the Electricity Sector losses were at 40%, and it had undertaken that the commercial and technical losses would be reduced by year 2005 to 16%. The reductions for years 2000, 2001, 2002, 2003 and 2004 should be 34%, 29%, 24%, 20% and 16% respectively. But the reality of the situation is that losses have not

decreased. At the end of 2001 the losses exceeded the target by 9.3% as they have admitted at the top of page 62 of their presentation.

As we understand it, GPL's case is that they had great difficulty in obtaining debt funding for their planned capital programme and they go on to admit that -

“even if funding were available GPL's experience suggests that the unavailability of suitable skills in Guyana and a long procurement process (following international lender requirements) may have delayed implementation” – **See p. 61 of their presentation.**

But they have identified a number of smaller projects to reduce technical loss with more limited funding.

And with respect to commercial losses, instead of replacing wires and meters on a system – wide basis, they chose to focus on an inspection and rectification programme thereby avoiding the need to replace equipment and avoiding the upward tariff impact of the associated capital expenditures.

It is significant to note that GPL has discovered that an examination of about 50% of the large customers installations disclosed that about 3% were under-recorded but rectified, and there was one case of over-billing. They claim that meter installations were inconsistent in design and implementation; and they made no provision for safe checking of metering accuracy. They feel that customers ought to be re-metered but they were reluctant to do so because the cost was high.

They further complain that they had limited skills available to deal with complex metering – that the main internal metering expert departed in 2002.

CDC/ESBI took over the management of GPL in September 1999 and for the 3 months of that year the total production was 112,855.2 megawatt hours. Of that amount only 72,867 megawatt hours or 64.6% were billed to consumers.

From January 2000 to December 2000 production was 457,076 megawatt hours but only 287,227 or 62.8% billed to consumers.

And for the period January 2001 to June 2001 production was 233119 megawatt hours and the amount billed was 144430 or 61.9% of production.

It means therefore that there were progressive increases in loss from 35.4% to 38.0% at the end of June 2001. In simple language for every 100 units generated only 62 % were utilized, the remaining 38 units being lost.

Meters

The amount of electricity supplied to any customer shall be ascertained by means of a meter or any other apparatus supplied and installed by the Company. The meter which the Company shall seal remains the property of the Company. Meter locations shall be approved by the Company based on the type of service and convenience of access to the meter.

The Company is free at any reasonable time to inspect and test the meter; and may remove it if it has been tampered with or has been damaged, or if it is not registering accurately.

The Company, however, must by evidence satisfy the consumer that the meter had been tampered with and not recording accurately.

At the request of any customer the Company shall test the accuracy of the meter to ascertain if it is within the prescribed range of plus or minus 2.5%. If it is outside this range and there has been no tampering or interference, the customer's account will be

adjusted, with an additional charge or a refund accordingly for the last three months and the meter shall be repaired or replaced.

Every effort must be made to correct what GPL calls the economic and technical losses. They complain that consumers steal electricity. But then, although there is loss as alleged by GPL through stealing GPL is not affected, because by the scheme of the tariff setting they will recoup for what is generated.

But are they suffering the quantum of losses by stealing as alleged? In their aforementioned submission to us in March 2000 they claimed that they inspected 23612 meters and found definite interference of 5.8%. They **suspected** interference by 1.9%. They had no access to 1914 locations and are equating this with “**possible interference**”.

This is an unacceptable situation in that if householders secure their premises and entrances to their yards and go out they will be “viewed with suspicion”.

These figures will go down as losses!

GPL, however, does not appear to have much interest in correcting what they perceive as power stealing. At page 63 of their presentation they complain that the cost of replacing a meter is large compared to the individual loss, and that they have very limited skills available to deal with complex metering.

GPL is insisting that the implementation of their plans is dependent on successfully raising the necessary funding; and that none of the formulae provides for any linkage between their performances and tariff setting arrangements,

We have not seen that the agreement or licence stipulated that the rate of return is not dependent on GPL achieving the targets or maintaining a reasonable, efficient and adequate service to consumers: But GPL has argued that-

“it is not within the power of either the shareholders individually or of the Commission to impute provisions into the agreements which are not explicitly provided for therein.”

So, it would seem, that it is all well for GPL to read into the agreement that there is no linkage between their performance and rates, but it is not competent or proper for the view to be held that there is nothing in the agreement which states that rate is not dependent on achieving the targets set. Are they trying to say that it is not necessary for them to achieve their targets, but they must benefit to the full extent to whatever rates are prescribed by the tariff-setting mechanism?

The Chief Executive Officer of GPL has explained in appealing to the public to desist from unlawfully procuring electricity that they were not stealing from the Utility but they were in fact stealing from other consumers who have to foot the bill. Question – how do these other consumers foot the bill? They do so by paying increased rates because tariff is calculated on the overall generation and not on the amount of electricity consumed. Attached hereto is a chart showing the energy generated, energy billed to consumers, percentages billed and percentages loss.

Funding

In terms of the agreement, the strategic investor has injected US\$20.M. Prior to the take over by GPL the collection rate on bills was 76%, it increased to 92% in 2001 but suffered a slight set back to 88% in September as a result of a strike. The overall cash collections increased from \$496M in December 1999 to \$1,029M in January 2002 – an increase of 107% - (See page 51 of Presentation). GPL also raised US\$28M; US\$7.3M from NBIC, US\$3M from Banco de Credito (Panama) and US\$17M from the European Investment Bank.

*But is
sure that it
could not
use money? (p 25)*

As pointed out earlier the Utility is maintaining that its development is dependent on sufficient funding but we had not been told that they had been refused funding from any source.

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They received \$3.3B from the Government of Guyana in subsidies, in 200 - 2001, and the bank balances show that at the end of the year 1999, 2000 and 2001 they had \$1,278,536,000; \$630,851,000; and \$849,552,000, respectively. At the end of December 2001 the bank balance included US\$3.7 million held in US dollars, equivalent to approximately G\$718 million. It is interesting to note also that for the year 2000, three directors of the Company were paid \$30,023,000.00 in fees and expenses as members of the Board.

evidence

Source

release

FINDING

We have thoroughly reviewed the presentation by GPL and considered each and every aspect, the moneys they have spent and the explanations offered for their performances.

We observe and we note that they have improved their generation capacity by about 12% from 444 gwh to 504 gwh in 2001; and has extended cable and placed new poles. They have also embarked on the Unserved Area Electricity Programme (UAEP) and about 800 homes are the beneficiaries of this programme. It is expected that about 40,000 homes may eventually benefit by year 2005/6. They also embarked on a training exercise and did work to enhance the appearance of the several areas of activities.

Despite these, however, we are not satisfied that GPL did not have the funds or the facilities to invest in reducing the losses for which consumers suffer on account of the utility not providing an efficient and reasonable service and to achieve what they had

undertaken. GPL's licences provides for a 29% line loss but GPL failed to achieve that standard. "Line loss" is the type of "service" contemplated by Section 25(1) – "efficient" applies to "service".

We mentioned earlier that the second schedule to the licence dealt with the reduction of losses. It acknowledged that a significant investment in material and equipment will be required to reduce technical loss; and with respect to commercial losses they shall develop and apply measures that will systematically identify unauthorised connections as well as fraudulent and incorrect billing and collections.

While acknowledging the input of significant investment for technical losses the licence did not foresee or anticipate significant financial investment to reduce the commercial losses.

The table at page 61 of GPL's presentation shows that they achieved their target with respect to technical losses but failed to improve on commercial losses. And as we pointed out, at page 62 of their presentation they claimed that their combined losses in 2001 exceeded the target by 9.3%. However, in their annual report for 2001 undated, but purporting to express an opinion on the financial statement by a firm of chartered accountants dated April 24, 2002, it was disclosed at page 10 that the technical and commercial losses in 2000 were 40%, and in 2001 they were 42%. If as is admitted the target for 2000 was 34% and 29% for 2001, it would suggest that losses exceeded the target in 2000 by 6% and 13% in 2001, an increase in losses rather than reduction. Note, however their claim, that losses for 2001 exceeded the target by 9.3%. **(Page 62 of presentation).**

If these figures tell a true story, it is indeed a regrettable state of affairs.

From what we have heard from GPL we are not satisfied that they have made the best efforts to reduce the losses. If more effort and attention were paid to that aspect of

the operation they surely would have reduced the losses. But their "best efforts" were not up to standard and there has been no improvement in the losses.

We find that GPL has not met the standard in accordance with its licence. They seek to justify or excuse that failure because of lack of funding. Indeed, they did not intend to expend sufficient funds to meet their undertaking. In the document submitted, dated 16th April 2002, they have addressed the question of losses and we quote:

"Technical and commercial losses remain stubbornly high. This is despite the extensive work programmes undertaken by the company. These work programmes aimed to get losses down without large capital expenditures. The reasons for this **included a desire to reduce overall funding needs** and to keep tariffs lower. We have been reviewing this approach and now **consider that large capital expenditure will be required to achieve necessary improvements.**"

Imagine this concession after two and a half years!

GPL had agreed in their development and expansion programme 2001-2005 that they will reduce **technical losses**; which will be implemented progressively during the five year period; and for **commercial losses**, they will require the inspection of all installations/networks and selective upgrading of service and meters.

We are not satisfied that GPL did not have the necessary funds to do whatever was necessary to reduce losses. It seems that they did not intend to seriously consider this aspect because it did not affect their revenue. At page 60 **under 4 Approach** of their presentation they claim that the approach they had taken to reduce loss has evolved due primarily to the great difficulty the company has had in obtaining debt funding for the planned capital programme but we have not been told what difficulties they had in obtaining debt funding. We are not aware of any of their alleged difficulties and indeed

we have not been told that funding from any source has been refused. But then they go on to say (p. 61 line 1) that even if funding was available, GPL's experience suggests that unavailability of suitable skills in Guyana nor had a long procurement process may have delayed implementation. A sort of avoidance and confession. This is speculative as there is no evidence that suitable skills are not in Guyana, nor had that they advertised for such skills. As a matter of fact, they have seventeen (17) teams to disconnect service to consumers, and all areas have been targeted in this exercise. Where illegal reconnections were found the meters and service cables are removed and customers are required to pay a fee of \$3000.00 to be reconnected together with the cost of restoring the service wire and meter. (See pages 51-52 of the presentation).

We have pointed out earlier our perception that it did not bother GPL on the question of losses because then the tariff takes into account the cost of total production which are passed unto the consumers.

We note the concessions by the representatives of the Government with respect to the conditions under which the strategic investor entered into the agreement. We do not think that it follows that GPL may not invest any money into the service and still expect to reap the full value to expressed in the agreement.

We pointed out that funds are available and at the disposal of the utility in the form of bank accounts to which we referred. There was also no shortage of funds to pay all the salaries, expenses and allowances to the Directors and other staff members and there has been no complaint that the Utility was not getting its 23% on equity.

And as we have pointed out earlier, the CEO of GPL has admitted that the rates have been in strict accordance with the provisions of ESRA and the licence, and these provisions were designed to enable GPL to receive revenue which covers operating expenses and to repay their capital and interest.

This 23% return will have taken into account all the business and other risks, and all the uncertainties under which GPL would have operated. They would have done their due diligence and the idea of the management contract was for the investor to bring in their experts and expertise and to attract financial investment. // *under*

One would have expected in normal prudent business practices the management, under contract would have run the utility in such a business like manner to cover operating expenses, and that the investors' contribution would be used for capital investment in the interest of the Company.

That was the intention behind the move to invite in and involve the strategic investor for the development and improvement of the electricity sector: // *under*

We have pointed out before, and it can bear repetition, that there was no evidence that the Utility had been refused funding from any source, or that any application by them was not favourably considered. // *Water? / clear?*

We find that the consumers have suffered loss as a result of the Utility not making their best effort to provide a reasonable and efficient service. >

In offering explanations for the continued losses GPL have resorted to speculations. For instance, at page 62 they claim that it was anticipated that GPL and the local economy would have the capability to install the requisite networks, but this proved not to be the case due to shortage of skills and available resources in the country generally. There was however no supporting evidence of this – that they could not find the skills or resources.

And these two references would show their approach to these serious questions and their apparent unconcern for standards to be maintained.

(a) **dealing with metering accuracy:** Existing installations made

no provision for safe checking of metering accuracy and are easily interfered with. **It has now been concluded** that all Tariff C and D customers **ought to be re-metered to a consistent up-to-date standard.** Management has been reluctant to reach this conclusion due to the relatively high projected costs. (p. 63). (62) (64) (1.5m)

Metering is an important component and a cause of great concern to all consumers.

- (b) Existing installation design facilitates theft of electricity; and GPL's inspectors have been geared to **identifying and rectifying suspect situations, but in general has not included replacing the service wires and meter.** This service approach was adopted since the appropriate cost of replacing the service and meter is large compared to the individual loss. (Page 63) (U.S. \$150 per meter)

We cannot but repeat that losses did not affect the revenue of GPL because having regard to the tariff structure the loss is passed on to the consumers who are called upon to pay for total generation costs.

The Commission in the discharge of its function must take into account the concerns of the utility to ensure that its business is viable and that it makes a return on its investment. On the other hand, the Commission must also take into account consumers' interest and to ensure that they get an adequate and efficient service.

The GPL has been in receipt of over three billion dollars in subsidy from the Government. Consumers contribute to the funds of the Government which are used or invested by the Government. And when losses are suffered by the Company, consumers are made to pay extra or increases to meet or cover these losses. Those losses are due to the inefficient manner in which the Company is run. So we see that the consumers are bearing the brunt of the inefficiencies of the Corporation.

where
evidence

We note however that one of the Directors representing the Government of Guyana as a shareholder, Mr. Winston Brassington, has declined to collect any money as fees for his Directorship and has returned whatever amounts he had received earlier. In other words he is serving without remuneration.

As a consequence of this all consumers have suffered losses because they are called upon to compensate the utility for their inefficiency. We pointed out that the tariffs are calculated on the amount of electricity generated and not on the amount consumed. When the tariff is worked out based on total generation the resulting rate per kilowatt hour is charged to the consumer for the amount consumed. We have no quarrel or complaint about that because that is how it should be in terms of the licence/agreement.

in my opinion

The loss which the consumers suffer is based on the losses which GPL has experienced because of their inefficiency which it had by the agreement undertaken to reduce.



In their Development and Expansion Programme for the years 2001-2005 GPL undertook to spend in 2001 a total sum of US\$8,250,000.00 equivalent to about \$1,584,000,000:)(Guyana) on Transmission substation, transmission lines and Distribution; but they spent only \$543,385,000:- (Guyana).

Some evidence returned

In the transmission and distribution process, GPL suffer losses which are classified as Technical and Commercial. Technical losses arise from both transformer and line losses. Commercial losses can arise from defective meters; administrative problems or discrepancies between field metering and information in the billing system; unauthorised or undocumented connections and theft:

The administrative problems resulting in discrepancies between field metering and information in the billing system, and unauthorised or undocumented connections are

human problems in that management should be vigilant to ensure that their employees are competent to do the job in a proper way.

1620RE1 TAFI (KRO)nd

Technical losses in 2001 should have been reduced to 13% and Commercial losses to 16%. As referred to earlier in the report GPL has admitted that their losses exceed target by 9.3%. It means that their combined total loss for 2001 was 38.3%.

Source ?

In our judgment the commercial loss could have been reduced if due diligence was employed by management, and proper supervision was effected.

We have set out heretofore in full the provisions of Sections 25(1)(2) and 26(1)(2) of the PUC Act. It will be observed that Section 25(1) provides, subject to 25(2) that the public utility shall maintain its property and shall make **every reasonable effort to provide in all respects, a safe, adequate, efficient and reasonable service** and Section 25(2) has encapsulated the conditions spelt out in paragraph 16 of the licence whereby where the agreement makes provision for the standard of quality of service, the service shall be deemed to be reasonable or adequate for the purposes of the Act if the aforesaid standard or quality is achieved and maintained.

Learned Senior Counsel for GPL has filed submissions and examined Sections 25 – 26 of the PUC Act. Before we offer comments on these we observe that he made certain references which we may term emotive. He noted that our decision to initiate proceedings against GPL followed official and unofficial outcry in respect of increases in electricity rates, which may infer that the proceedings are motivated by the perception that electricity rates are unreasonably high.

We reject out of hand the view of GPL or their Counsel that the Commission is motivated by extraneous circumstances. We have set out in our judgement how the rates are arrived at and that we have no jurisdiction to investigate or interfere in that area, since the agreement and other relevant related documents have provided a formula and in which the PUC has role.

No JURISD
WR
RATES

But, on the other hand, Counsel has submitted that if we feel “ **that depriving defaulting customers of electricity to a greater extent than is currently done by GPL would positively impact on the recovery of commercial losses, the Commission should indicate how this can be done, give sufficient opportunity to GPL to do it, and accept responsibility for the public and official back lash that will ensue.**”

*to conclude
way, one
must be
able to
say what
a, really
was won
have for*

We find great difficulty in understanding what Counsel is trying to tell us – except that we think a subtle threat is made that unless we rule in a certain way we will cause disruption in the social order in the community.

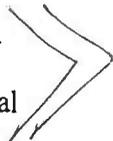
These sentiments came immediately after Counsel’s submission that the “present rate of recovery of commercial losses has not been shown by any evidence before the Commission to be capable of serious improvement by better management.”

So there we have it. Our judgement is based on the filings and reports of GPL, and Counsel’s submission suggest that they cannot better the management of commercial losses. The Commission has not assumed responsibility to manage the Utility – Management is adequately compensated in terms of management fees to efficiently run the Corporation, and by their own admission the losses have been increasing instead of decreasing in breach of their undertaking to do better.

*IRRELEVANT
CONS. DER. D.W*

Section 25 of the Act provides for the Utility to maintain its property and equipment in such a condition as to enable it to provide a service to the public in all respect safe, adequate, efficient, reasonable and non-discriminatory.

Counsel for GPL has urged that service in Section 25 deals with the delivery or furnishing of electricity to the consumer and the provision of facilities, but does not deal with rates or the collection of receivables or losses.



Section 3 (1) of the Act defines **service** as **including the accomodation** afforded consumers etc. etc. In the context of Section 25, **service** cannot exclude the provision of safe, adequate, efficient and reasonable electricity to consumers.

By their own admission GPL has not been providing an adequate and or reasonable and or efficient service as a consequence of which customers suffer losses

|| *Whe*

We find, accordingly, that GPL are in breach of Section 25 of the PUC Act, and Section 26 is hereby set in motion whereby the Commission can make certain orders.

An order for compensation to be paid to consumers in no way seeks, or can be properly interpreted, to attempt to circumvent the provisions of **ESRA** with a view to fixing or interfering with the rates to which GPL are entitled.

We have attached a schedule hereto which seeks to explain the losses suffered by the consumers as a result of the non-achieving of the target by GPL.

GPL accordingly are in breach of Section 25 of the PUC Act

Based on the figures the total loss to all consumers is \$1,368,284,000 (Guyana). This calculates to \$4.70 cents per kwh based on 288,861,672 kwh sold to them. The loss suffered by the consumers is as a result of the utility not providing a reasonable and efficient service to them. And in the circumstances we consider it reasonable and just that GPL will be required to pay compensation to each consumer for the loss suffered.

We wish it to be clearly understood that the compensation for loss calculated at \$4.70 per kwh is not intended to reduce the basic rate which customers must pay for electricity consumed in terms of the tariff structure in accordance with the provisions of the second schedule of ESRA.

The Commission accordingly makes the following orders:-

ORDER

- (a) GPL shall within the next six (6) months ensure the reduction of the combined technical and commercial losses to 24%.
- (b) They shall submit to the Commission at the end of each three month period from date hereof the commercial and technical losses.
- (c) GPL is ordered to pay compensation to all consumers the sum of \$1,368,284,000 for loss suffered because of the utility not providing an efficient service
- (d) It is further ordered that GPL will be at liberty to pay such compensation to each consumer at \$4.70 per kwh for the number of kwh which each customer consumes with effect from the billing period 1st October 2002 until the amount of \$1,368,284,000.00 is fully discharged.
- (e) It is further ordered that GPL be at liberty to credit each consumer's account each month with the entitlement, and such to be reflected in the bill issued to the customer
- (f) And is also further ordered that GPL at the end of each month, commencing end of October 2002 submit and file with this Commission a statement showing the amount credited and or paid over to the consumers.

Dated this 23rd day of July 2002.

PUC ORDER NO. 3/2002

..... Signed

Prem Presaud C.C.H.

- Chairman

..... Signed

John Willems A.A.

- Commissioner

..... Signed

Hugh George

- Commissioner

..... Signed

Badrie Persaud

- Commissioner



CERTIFIED A TRUE COPY
OF THE ORIGINAL

[Handwritten Signature]

Secretary
Public Utilities Commission

July 25 2002

GPL – LOSS SUFFERED BY CONSUMERS – YEAR 2001

Units sold to consumers for period January – June 2001 = 144,430,836 kwh
Therefore total units sold for the year (estimated) = **288,861,672 kwh**

Loss suffered by consumers

Actual/Target Loss 38.3% / 29%

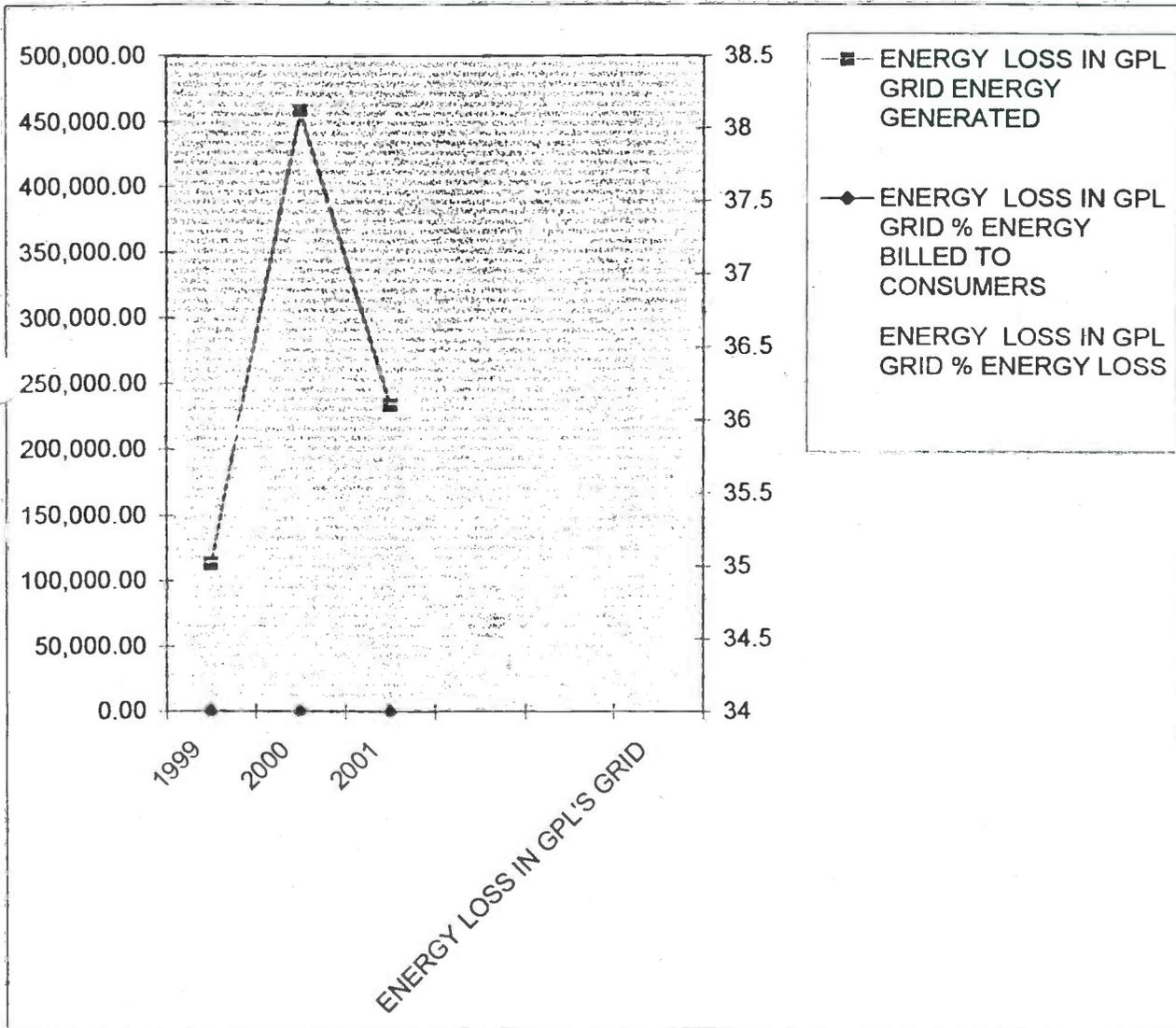
Total loss G\$'000 1,368,284

Loss per kwh \$4.70

ENERGY LOSS IN GPL GRID

Year	Energy Loss (kWh)	% Energy Loss
1999	112,855.20	64.6
2000	457,076	62.8
2001	233,119	61.9

ENERGY LOSS IN GPL'S GRID



GUYANA POWER & LIGHT, INC.

		(A)		(B)
Part D		Actual 2001 G\$'000		Adjusted 2001 G\$'000
A. Calculation of Operating Income				
Operating Income				
Revenue from Sales		10,614,011		
Other income excluding O&A fees		123,566		
Total Operating Income		10,737,577		10,737,577
Operating Expenditures				
Generation		6,187,546		4,527,621
Transmission & Distribution		136,982		136,982
Administration		2,662,394		2,662,394
Other Expenses		423,179		423,179
Tax excluding income tax		29,879		29,879
Total Operating Expenditure		9,439,980		7,780,055
Less: Depreciation Included in above		0		
Operating Expense less depreciation	II	9,439,980		7,780,055
Revenues less Operating Expenses	III	1,297,597		2,957,522
Depreciation	IV	658,523	150,000	808,523
Realised Exchange gains/losses	V	49,100		49,100
Net Operating Income	VI	589,974		2,099,899
B. COMPONENTS OF RATE BASE				
Property		675,673		675,673
Plant		9,504,008	1,040,675	10,544,683
Less: Decommission cost & capital Contr. Not amortised		732,936		732,936
a. Allowable Fixed Assets at end of Year	VII	9,446,745		10,487,420
Capital additions in use (50%)		740,987		
WIP during year (50%)		518,096		
b. Allowable Additions & WIP (n max.10% of Vlla.)		944,675		944,675
Total Allowable Fixed Assets	VIII	10,391,420		11,432,095
Allowable Inventory				
a. Inventory excluding fuel at beginning of year		217,170		217,170
b. Inventory excluding fuel at end of year		732,353		732,353
Average Inventory		474,762		474,762
Allowable fixed assets x 12.5%		1,298,928		1,429,012
Allowable inventory limited to 12.5% of Allowable fixed assets		474,762		474,762
Allowable Fuel Inventory				
c. Fuel & lube inventory at beginning of year		306,009		306,009
d. Fuel & lube inventory at end of year		256,372		256,372
Average fuel & lube inventory		281,191		281,191
Max. monthly fuel usage(gals.) (highest month)		2,977,667		2,977,667

Average price per gallon		148.5	148.5
		442,184	442,184
Max. monthly fuel * 1.5		663,276	663,276
Allowable fuel inventory limited to 1.5 max. fuel		281,191	281,191
Total Allowable Inventory (Spares & Fuel)	VIII	755,953	755,953
Allowable Prepayments & Deposits			
a. Prepayments at beginning of year		12,322	12,322
b. Prepayments at end of year		75,225	75,225
j. Average Prepayments		43,774	43,774
Limited to 1.5% of 7a. Fixed assets at year end		141,701	157,311
Total Allowable prepayments & deposits	IX	43,774	43,774
Allowable Working Capital	X		
a. Operating expenses per II above		9,439,980	7,780,055
b. Fuel & Lube expenses		4,702,801	4,702,801
c. Consumer deposits at beginning of year		100,468	100,468
d. Consumer deposits at end of year		199,969	199,969
Total Allowable Working Capital = (10a-10b) x12.5%(10c-10d)/2	X	441,929	234,438
Average Unbilled Sales			
a. Unbilled sales at beginning of year		671,320	671,320
b. Unbilled sales at end of year		925,000	925,000
k. Average unbilled sales		798,160	798,160
Gross revenue		10,737,577	10,737,577
5% thereon		536,879	536,879
Allowable average unbilled sales	XI	536,879	536,879
H. Rate base Adjustment			
Guyana \$/US\$ at beginning of year (ERT0)		186	186
Guyana \$/US\$ at end of year (ERT1)		192	192
(ERT1 - ERT0)/ ERT0) -2.9%		0.33%	0.33%
Rate base adjustment at beginning of year		0	0
Average US Equity base		5,016,000	5,016,000
Average US Equity base + Rate base adjustment		5,016,000	5,016,000
Rate base adjustment at end of year		16,342	16,342
If negative rate base adjustment = 0	XII	16,342	16,342
C. Calculation of Rate Bases			
Rate Base = VII+VIII+IX+X+XI+XII	XIII	12,186,296	13,019,480
D. Calculation of Allowable Return			
ARR* XIII		2,071,670	2,213,312
E. Calculation of Final Deficit			
Operating Income VI		589,974	2,099,899
Less Allowable return		2,071,670	2,213,312
Deficit Final Return		-1,481,696	-113,413

PART F FINAL INCREASE IN HEADLINE RATES AND SERVICE RATES IN 2002

Deficit Return	0	x	365 x	100%	13.95%
Total Revenues from Sales	10,737,577		365		

Loss suffered by consumers 1,368,284

PART B CALCULATION OF SUM OF WEIGHTED AVERAGE COST OF EQUITY AND WEIGHTED AVERAGE COST OF DEBT

	G\$'000		
a. Equity at beginning of year (Common, Paid up Class A + Prom. Notes)	6,957,000		6,957,000
b. Rate Base Adjustment	0		0
c. Average adjusted equity at beginning of year	6,957,000		6,957,000
d. Equity at end of year	7,907,000		7,907,000
e. Rate Base Adjustment	16,342		16,342
f. Average adjusted equity at end of year	7,890,658		7,890,658
g. Average equity for year	7,432,000		7,432,000
h. Average adjusted equity for year	7,423,829	64.22%	7,423,829
i. All Debt at beginning of year	1,500,013		1,500,013
j. Add paid up Class B preference shares at begin of yr.	2,160,000		2,160,000
k. Total debt at beginning of year	3,660,013		3,660,013
l. All Debt at end of year	2,451,156	1,040,615	3,491,771
m. Add paid up Class B preference shares at end of yr.	2,160,000		2,160,001
n. Total debt at end of year	4,611,156		5,651,772
o. Average debt for year	4,135,585	35.78%	4,655,893
Total Capitalisation	11,559,414		12,079,722

PART C

CALCULATION OF TARGET RATE OF RETURN ON WEQUITY AND AVERAGE INTEREST RATE

Return on Equity

a. Opening adjusted equity, excluding promissory notes	5,436,000		5,436,000
b. Closing adjusted equity	7,269,658		7,269,658
c. Opening promissory notes	1,521,000		1,521,000
d. Closing promissory notes	621,000		621,000
e. Opening Class A preference shares	2,160,000		2,160,000
f. Closing Class A preference shares	2,160,000		2,160,000

Target rate of $(a+b-e-f) \times 23\% + (e+f) \times 20\%$ 2792701.236 18.81% 18.81%

$\frac{a + b + c + d}{14878657}$

Average Interest Rate

g. Interest expense	132,169		132,169
h. Amortisation of debt premium	0		0
i. Amortisation of debt discount	0		0
j. Amortisation of guarantee fees	0		0

Amortisation of loan charges & related costs	0	0
l. Class B dividends	432,000	432,000
m. Average Debts	4,135,585	0

564,169	13.64%	#DIV/0!
4,135,585		

Allowable Rate of Return (ARR)

A	Equity weighting * target rate of return	64.22% x 18.81%	12.08%	11.56%
B	Debt weighting * average interest rate	35.78 x 13.64%	4.88%	4.67%
	ARR	A + B	16.96%	16.23%

If average debt remains at 13.64% then ARR 16.82%

Notes: For Column B.

	B
	2001
	G\$'001
Operating Cost	6,187,546
Less Usage Fees	207,964
Adjusted Operating Cost	5,979,582
(assume this is at 38.3% T&D loss)	
At 29% T&D Loss Operating Cost	4,527,621
Reduction in Operating Cost	1,451,961

- a. It was assumed that the operating cost were as a result of the 38.3% T & D loss. It was further assumed that if the T & D losses were lower, there would be a corresponding decrease in operating costs. The year end targeted loss of 29% for T & D was used.
- b. An increase was made for capital expenditure for the T&D system of \$1,040,615. This was the difference of what was spent on T&D in 2001 and what GPL undertook to spend in their Development & Expansion Programme for 2001. It was assumed that if this amount was spent that the T&D losses would have been reduced to 29%.

Actual Capital Expenditure in T&D in 2001	\$543,385
Expansion Programme Projections in 2001	\$1,584,000
Difference	(\$1,040,615)

- c. It would be reasonable to leave the average interest rate for Debt at 13.64%, because no allowance was made for increase interest expense.