

“EXHIBIT 3”

APPLICATION FOR APPROVAL OF
THE DEPRECIATION POLICY OF THE
BARBADOS LIGHT & POWER
COMPANY LIMITED

AFFIDAVIT OF MARK KING

I **MARK KING**, of #35 Mount Gardens, in the Parish of St. George in this island, being duly sworn hereby **MAKE OATH** and say as follows:

- 1.0 I am the Chief Operating Officer of The Barbados Light & Power Company Limited ("the Applicant"), a company registered under the Companies Act, Chapter 308 of the Laws of Barbados with its registered office situated at Garrison Hill in the parish of St. Michael. The Applicant is a vertically integrated electric utility company. It has a franchise pursuant to The Barbados Light and Power Company (Extension of Franchise) Act, Cap 278 of the laws of Barbados, to supply energy for all public and private purposes for a period of forty-two years.

- 2.0 I am duly authorized to depose to the following facts and matters in this Affidavit and the statement of facts herein are within my personal knowledge unless otherwise stated.

- 3.0 I joined the Applicant in 1976 and have been with the Applicant for over 30 years. I joined the Applicant as a trainee engineer. In 1978, I left the Applicant to pursue a Master of Science - Electronics. On completion of my studies, I returned to the Applicant in 1979 and joined the Planning Department where I remained for a few years until I was assigned to the Distribution Department

where my duties included responsibility for construction and maintenance of substations, the installation and management of the Supervisory Control and Data Acquisition ("SCADA") system which is used to monitor and control the entire distribution and transmission network. In 2006, I was appointed the Chief Operating Officer of the Applicant. A copy of my curriculum vitae is exhibited hereto as Exhibit "MK 1".

4.0 In my capacity as Chief Operating Officer of the Applicant I have overall responsibility for the areas of generation, distribution and transmission and administration. Administration includes the purchasing section, monitoring the inventory and the Health Safety, Environmental and Quality (HSEQ) Management System.

5.0 INTRODUCTION

5.1 Purpose

5.1.1 The purpose of this Affidavit is to provide general information regarding the assets used by the Applicant to provide service to its customers.

5.1.2 The Applicant operates a variety of generating plant including steam turbines, low speed diesel engines and gas turbines at three generating stations, namely, Spring Garden, Seawell and Garrison. Additionally, the Applicant owns the transmission and distribution infrastructure needed to supply electricity to customers across the island. This infrastructure includes poles, conductors, substations, transformers and meters.

5.2 ASSET CLASSIFICATIONS

5.2.1 The information provided herein is generally set out in the same manner as the asset classifications used in the Applicant's accounting groups for depreciation and is incorporated into and forms a part of the plant accounting records of the Applicant.

5.3 Generation

5.3.1 The following are the main categories for generation.

- Steam Plant;
- Low Speed Diesels;
- Gas Turbines; and
- Generating Buildings.

5.4 Transmission & Distribution

5.4.1 The following are the main categories for the transmission & distribution.

- Substation Buildings;
- Substation Equipment;
- Poles;
- Transformers;
- Conductors;
- Underground cables; and
- Meters.

5.5 General Property

5.5.1 The following are the main categories for general property.

- Buildings;
- Vehicles;
- Furniture; and
- Computers.

6.0 GENERATION ASSETS

6.1 Generation Buildings

6.1.1 The buildings designed to house generating plant are purpose built. The height, size, and foundations, are all designed for the generators that are housed. Re-use for other purposes is therefore generally limited.

6.2 Electrical Generators

6.2.1 General

Generators will continue to run for many years if well maintained. The Applicant has a rigorous maintenance regime and has achieved high levels of availability on its units. The Applicant evaluates the performance of its generating units on an ongoing basis. The Generators will need to be retired for a number of reasons including:

- **Technical Obsolescence** – This includes the condition of the plant, the effort required to maintain the unit and keep it operational, the support offered by the original manufacturer or an alternative service company and the availability and cost of spares. Consideration is also given to environmental impact, where older generators do not meet current environmental

standards and the cost of upgrading is greater than the cost of replacement.

- ***Economic Obsolescence*** – This generally relates to the efficiency of the units, that is how effectively the unit converts fuel to electricity. Changes in technology and the resultant cost of spares may also render a unit uneconomical.

6.3 Steam Turbines

6.3.1 The Applicant has two steam turbine generators, which were commissioned in 1976 and have now operated for some 32 years. Rigorous water quality control, non-destructive testing of the boilers and the replacement of the control system have contributed to the continued availability of these units and their associated boilers.

6.3.2 The Generation expansion study prepared for the Applicant by PB Power in association with Advanced Engineering Solutions Inc. and presented in February 2005 (the Generation Expansion Study), provides an economic assessment which essentially supports the Applicant's projected retirement date of 2012.

6.4 Low Speed Diesel Generators

6.4.1 The first low speed diesels were installed in 1982, some 26 years ago. These units continue to achieve high levels of availability with high running hours. I am reliably informed and verily believe that the first two units, D10 and D11, have accumulated the most running hours of any of this type of unit in the world.

6.4.2 The design life of modern low speed diesel units is generally taken as 30 years or 200,000 hours as provided in the Generation Expansion Study. Technical or economic limitations, as outlined earlier, determine the actual retirement date of the units.

6.4.3 An example of the need to upgrade certain auxiliary and sub-systems is the electronic governors and aspects of the control systems on the first units (Units D10 to D13) that have been replaced with more modern computerized systems since the units were commissioned. Spares and technical support for the original control systems were no longer readily available and this situation could have compromised the availability and reliability of the plant if no corrective action was taken.

6.5 Gas Turbine Generators

6.5.1 The Applicant operates five (5) gas turbines for peaking and intermediate generation. These units are industrial design turbines. The first was installed in 1990 and is still in use. Generally, the useful life of these turbines is estimated to be 25 years. Maintenance contracts are in place with the original manufacturers who supply the requisite labour and material to perform maintenance in accordance with their specifications.

6.6 Salvage Value – Generating Equipment

6.6.1 The Applicant's experience has been that there is a net cost to the Applicant associated with the demolition and disposal of old generating plant. Most recently the Applicant retired two stations and incurred costs in doing so, rather than gaining a positive salvage value.

6.6.2 In the first instance, an attempt is made to sell the retired unit and any useable spares which are available. If this proves unsuccessful, the next step would be to disassemble and dispose of the unit as scrap. Prior to the actual disposal, the units must be thoroughly cleaned to avoid negatively impacting the environment. Removal of the units is costly and complex because of their size and weight.

6.6.3 Remediation of the site, once the units have been removed, usually requires the use of specialized equipment to demolish foundations and similar purpose built concrete structures. It is expected that there will be a cost for the disposal of generators in the future as this has been the experience in the past.

7.0 TRANSMISSION & DISTRIBUTION ASSETS

7.1 Substation Buildings

7.1.1 These buildings are purpose built. However, retirement of the equipment, while requiring some modification to the building, would not likely require a new building to be constructed to house new switchgear.

7.2 Substation Equipment

7.2.1 The Applicant has generally standardized the type and design of switches and breakers. This is reviewed periodically after technical evaluations and competitive bids. Substation equipment is maintained in accordance with manufacturers' recommendations and the experience of the Applicant. Retirement is typically based on technical obsolescence, that is, spares and support are no longer readily available.

7.3 Poles

7.3.1 The Applicant has used different types of poles over the past many years of its operations.

7.3.1.1 Wallaba Poles

Up until the early 1980's, the Applicant used Wallaba poles imported from Guyana. Wallaba is a hardwood and is still used for fence posts and other general uses in Barbados. The Applicant's early experience with Wallaba was relatively good, but in the 1970s, rapid deterioration of the Wallaba resulted in a major review of this type of pole and after due consideration,

research and investigation, the Applicant made the decision to switch to southern pine poles.

7.3.1.2 Southern Pine Poles

Southern pine poles are now used exclusively by the Applicant and have proved successful. Early problems with rot near the ground-line of the poles have been addressed by remedial treatment. Specifically, the Applicant has introduced a Ground Line Treatment programme for its poles with a seven (7) year cycle. Evaluation of pole condition after the first treatment cycle by representatives of Osmose, Inc. confirmed that the 7 year cycle is appropriate and that the treated poles were in sound condition compared to untreated poles. (*Ref. Evaluation and Training of Ground Line Treatment of Poles with TIMBERLINE and COP-R-Plastic for Barbados Light & Power August 2007, Osmose Inc.*) The Applicant conducts a regular inspection and maintenance programme on its T&D system, and where pole retreatment is not possible or practical, the pole will be replaced.

7.3.1.3 Other Pole Options

The Applicant has reviewed other options including steel and concrete poles, but considers that the additional costs, handling and other technical and logistical issues do not favour the switch to these options.

7.4 Conductors

7.4.1 The Applicant uses two types of overhead line conductor – aluminum and copper. These are used in different gauges or sizes, depending on the current (electric load) that the conductor will be required to carry.

7.4.1.1 Aluminum Conductors

The Applicant selected all aluminum conductor in the 1970s and has had excellent experience with this type of conductor. A study conducted by ALCAN in the 1970 (Ref. Electrical Conductor recommendations for Barbados Based on CLIMAT Data) determined that all aluminum was a suitable choice for conductor in our harsh salt laden environment. Electric utilities in the United States use steel cored aluminum conductor extensively, but this is more susceptible to corrosion problems in our environment and failure due to corrosion.

7.4.1.2 Copper Conductors

Copper conductor is used on the east coast of the island where the presence of extreme salt laden spray requires a conductor that can stand up to the highly corrosive environment. Overhead copper conductor, although durable, is more expensive than aluminum and its use is therefore much more limited to circumstances where its use is warranted.

7.5 Distribution Transformers

7.5.1 The Applicant installs pole mounted and pad mounted (ground mounted) transformers. There are approximately 9400 of these units placed around the island to reduce the high distribution voltage to the voltage required by the customer.

7.5.2 Stainless Steel Transformers

7.5.2.1 In the early 1990's the Applicant carried out an economic evaluation of the benefits of installing stainless steel transformers that would be resistant to the corrosion that comes from operating in the heavily salt laden atmosphere that prevails in Barbados. At first this initiative was focused on the areas on the east coast of the island, but the benefits were quickly recognized and the Applicant decided to purchase only stainless steel enclosed transformers for installation on its poles.

7.5.3 This initiative has also resulted in an improvement in service reliability as the need for outages to replace faulty transformers has been reduced significantly.

7.6 Meters

7.6.1 The Applicant has over 115,000 meters installed. These are either meters that measure only energy (kilowatthours) as used by the majority of customers, or demand meters that measure energy consumption

(kilowatthours) as well as measure and record the maximum electricity demand (kVA) used by the customer. These latter meters are installed on all commercial installations.

7.6.2 Electro-Mechanical Meters

The Applicant, like most electric utilities has used the traditional electro-mechanical meters over most of its existence. These are very robust and can be serviced.

7.6.3 Electronic Meters

7.6.3.1 Like other utilities, the Applicant has introduced electronic meters, which now dominate the market. Indeed, many manufacturers have discontinued the sale of electro-mechanical meters as the cost of these increases and the cost of electronic meters decline.

7.6.3.2 Electronic meters also have additional features that could offer an opportunity for enhancing its service through Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI). The Applicant is giving careful consideration to these possibilities.

7.6.3.3 Like most computerized and electronic equipment, electronic meters are expected to have a shorter technical life than the older electro-mechanical meters mainly resulting from

technological obsolescence. It is likely therefore that in this area, the asset life of meters as a group will be reduced.

7.7 Underground Cables

7.7.1 The Applicant is increasingly using underground cables for its transmission lines (24kV and 69kV). Modern high voltage cables are durable and reliable, but very costly to install. Cable manufacturers have made significant technological advancements in cable design and manufacture, driven by experience with premature failure in the 1970s. The Applicant has drawn on this experience and specifies its requirements to ensure long life and reliable operation.

7.7.2 More limited use is made of underground high voltage cables in distribution systems, but these are generally installed in residential and commercial developments where this is the choice of the developer. Underground cables are also installed where space restrictions are a factor, such as in Bridgetown, and also where a secure supply is required, such as at the Queen Elizabeth Hospital, the Belle Pumping Station, and other key facilities.

8.0 GENERAL PROPERTY

8.1 Asset lives in these categories are non-utility specific.

8.2 The Applicant owns and operates a fleet of vehicles as part of its daily operations. The life expectancy of these vehicles has improved significantly over the years as the Applicant switched from gasoline powered units to more efficient and robust diesel powered units. Regular maintenance by a trained

in-house staff of mechanics coupled with a more rigorous selection process including visits to the manufacturers has resulted in extending the availability of these units.

9.0 SERVICE LIVES

9.1 During my tenure at the Applicant, depreciation studies have been prepared by independent experts on behalf the Applicant. The most recent study is the study prepared by Mr. Peter Huck of American Appraisals Associates, Inc. I have read the final report of American Appraisal Associates, Inc. dated April 1, 2008 (the Depreciation Study) which is exhibited with the Applicant's Application. Exhibit A of the Depreciation Study represents fairly the groups of the generation plant, the transmission and distribution plant and the general plant of the Applicant and from my knowledge the average service lives there represented are reasonable.

SWORN TO by the said **MARK KING**)
At the Law Courts, Coleridge Street, Bridgetown))
this 10th day of November 2008)



Before me:

N. Padma
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LEGAL ASSISTANT (ag)

APPLICATION FOR APPROVAL OF
THE DEPRECIATION POLICY OF THE
BARBADOS LIGHT & POWER
COMPANY LIMITED

EXHIBIT "MK 1"

This is a copy of my curriculum vitae marked Exhibit "MK 1" mentioned and referred to in paragraph 3.0 of my Affidavit.

SWORN TO by the said MARK KING)
At the Law Courts, Coleridge Street, Bridgetown)
this 10th day of November 2008)



Before me:

N. Padme
LEGAL ASSISTANT (ag)

Mark ST.C King

#35 Mount Gardens
ST. George
437-5537

Experience

Oct 2006 – Present **Barbados Light & Power**
Chief Operating Officer

Jan 2005 – Sep 2006 **Barbados Light & Power**
Manager Information Systems

June 2001- Dec 2005 **Barbados Light and Power**
Project Manager - New Supervisory Control and Data Acquisition (“SCADA”) system
Senior Engineer - Technical section Distribution Department.

SCADA

- Responsible for directing a cross-functional team in the definition of the Company's requirements for the SCADA system.
- Approved, on the Company's behalf, the selection of the Vendor
- Represented the Company at all negotiations with prospective Vendors.
- Conducted and approved Factory Acceptance Tests
- Supervised the installation and site acceptance testing of the system.
- System Administrator.

Technical Section

- Direct responsibility for the performance of one Engineer and one Assistant Superintendent.
- Responsible for the approval of all major Distribution Network switching
- Approved all Budgets for the Section
- Assist Substation engineer in daily duties -primarily technical in nature.
- Coordinated the installation and commissioning of all substation switchgear
- Responsible for the day-to-day maintenance and administration of the SCADA system
- Responsible for the entire VHF/UHF Communication Network.

June 1999 - June 2001 **Barbados Light & Power**
Project Manager PSMAX

- Effectively Managed team of 20 employees and Consultants during the installation of the applications
- Developed terms of reference for Consultants for this project.
- Managed the selection of the consultants
- Managed the selection of the Applications
- Assumed full responsibility for day to day requirements of the entire team
- Reported to the Steering Committee of Senior Managers
- Drafted and presented a successful cost benefit analysis of the project
- Prepared and managed the entire budget for the Project.

March 1984 - **Barbados Light and Power**
June 1999 *Senior Engineer - Technical Section Distribution Department.*

- Direct responsibility for the performance of one Engineer and one Assistant Superintendent. A total of 43 persons in the Section.
- Assisted in the development and installation of the Company's Switching and Tagging Procedures.
- Developed Trouble Call analysis and reporting system, which reduced the delivery of the daily log book from days to minutes.
- Responsible for the approval of all major Distribution Network switching
- Approved all Budgets for the Section
- Assisted Substation engineer in daily duties -primarily technical in nature.
- Responsible for the day-to-day maintenance and administration of the SCADA system
- Responsible for the entire VHF/UHF Communication Network.

Education

- 1979 **University of Southampton** Southampton, England
Master of Science- Electronics
Awarded the Commonwealth Scholarship in 1978
- Designed and built microprocessor based In Circuit Emulator for testing and debugging Microprocessor based systems where conventional test equipment would be useless.*
- 1976 **University of the West Indies** St. Augustine Trinidad
Bachelor of Science- Electrical Engineering
Awarded the Aubrey Collymore Scholarsip in 1973
- Achieved Upper class Honors*

Additional Education

- 1999 **Strategic Information Services**
Project Management Training Certificate
- 1993 **Stone & Webster**
Utility management development program Certificate.
- 1989-1981 **Barbados Institute of Management and Productivity Certificates**
Accounting and Finance for Managers
Economics for Managers
Management of Human Resources

Personal *Member of the Amateur Radio Society of Barbados.*

Professional *Member of the Barbados Association of Professional Engineers*
Member of the Institute of Electrical and Electronic Engineers