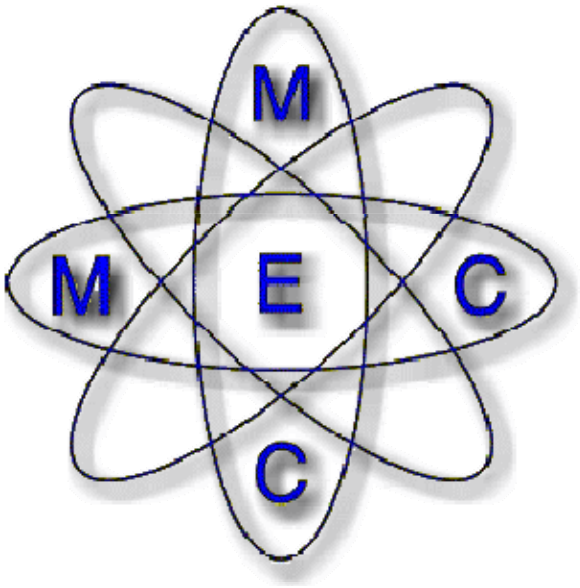
MARSHALLS ENERGY COMPANY

MAJURO, REPUBLIC OF THE MARSHALL ISLANDS



STRATEGIC FINANCIAL PLAN
AND
PERFORMANCE AUDIT AND REVIEW

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1. INTRODUCTION

The Marshalls Energy Company (MEC) has a long history of providing reliable, low cost energy to the Republic of the Marshall Islands. Very recently several events combined to influence the need for a major outside study of MEC; most notably the financial pressures of a change in fuel suppliers, the unprecedented global escalation of fuel costs and the announced retirement of a respected long-time General Manager. These events combined to cause significant financial distress to an otherwise historically stable financial picture for MEC, and to cast doubt on the future viability of the operations of the utility.

As a result of the confluence of these and other factors the RMI government requested and was given assistance from the US Department of the Interior for a comprehensive MEC Performance Audit and Future Structure Options Contract. The over arching purpose of the study was to review the recent operational history of MEC as compared to appropriate performance indicators and to examine the appropriateness of the current structure of MEC in light of these findings. Also of interest were recommendations for the future structure and scope of MEC operations.

The Nelson Associates firm was awarded the contract and under the Terms of Reference of the agreement (See Exhibit 13.6) conducted an extensive study of MEC in the final quarter of 2006, spending several days in October 2006 on Island. This report is a result of Nelson Associates' extensive global expertise in operating, managing and studying Utility operations.

In the Terms of Reference for this project there were seven main issues requested to be addressed. Item 1 & 2 related to a Performance Audit for MEC. Item 3) requested an analysis of the current structure of MEC including fuel and alternative energy. Item 4) related to analyzing the appropriate scope, size and structure of MEC including water and sewer operations. Item 5) requested an identification of public-private cooperation opportunities for MEC. Item 6) requested a listing of recommendations of the issues listed in 3), 4) and 5). Item 7) related to identifying a plan of action schedule for MEC for the recommendations presented.

This report is organized with the Executive Summary reviewing the past very good Accomplishments of MEC; a list of the Challenges facing MEC & Processes for Solutions; a brief discussion of the Structure recommended for MEC; a reference to the Public-Private Cooperation opportunities; and a review of the Performance Audit. The report continues on with a list of Findings and a list of Major Recommendations. Many of the Recommendations were the result of the MEC Board's work on a Strategic Financial Plan which is included in this report as Section 5.

In order to provide MEC with recommendations that would be compatible with the visions of the MEC Board, the Consultants conducted two (2) half day work shop sessions wherein the board and key management staff participated in development of a Strategic Financial Plan for MEC. This activity was not specifically called for in the

Terms of Reference but due to the very serious nature of the financial condition of MEC, it was determined that only by working with the Board through the Strategic Financial Planning process would it be possible to gather the information necessary about the visions and desires of MEC, the Majuro Community and the RMI to be able to develop a list of recommendations that would be acceptable and workable.

After presenting the Strategic Financial Plan in this report there are sections covering the RMI Next Steps – Major Operational Recommendations and Schedules; Background of MEC; Fuel Issues; Financial Review of MEC ; the Performance Audit with a Performance Assessment Chart which includes 101 performance criteria in eight (8) categories accompanied by a Narrative of each of the Performance Factors; a list of What Next that includes a suggested schedule as a guideline; a discussion of the Kwajalein Atoll Joint Utility Resources; an Overview of the Majuro Water and Sewer Company and the Chart of Exhibits and Appendix. Due to the confidentiality of information, a separate document was developed for the discussion and analysis of the Public-Private Cooperation opportunities.

1.1. Management Changes During Project

Longtime MEC General Manager Billy Roberts submitted his resignation for personal reasons in July, 2006. RMI President Kessai Note requested Billy Roberts to continue serving as General Manager until at least January 2007. Mr. Roberts returned home to England in early October, 2006 for an extended vacation with plans to return in January 2007. Steven Wakefield was named acting General Manager and Bermen Laukon retained the position of Assistant General Manager. Bermen Laukon was also named as liaison between MEC and KAJUR.

RMI Chief Secretary Bobby Muller submitted his resignation for personal reasons in September 2006 and continued to serve, including as a Board member of MEC, until the end of November 2006.

1.2. Methodology

Lead consultant Robert E. Nelson, and his colleague Mike Conduff, were engaged to conduct an operational review and strategic plan for the Marshalls Energy Company. These consultants conducted an extensive literature and financial review, held numerous in-depth interviews with key stakeholders and staff, and facilitated an extremely productive strategic planning process with the MEC Board during the course of their extended visit to RMI in October 2006.

2. EXECUTIVE SUMMARY

2.1. Summary

These are very difficult times for MEC with a number of events that have come together all at the same time to provide serious challenges for the future of MEC. The main factor leading up to the present financial difficulties facing MEC was Mobil Oil's decision in early 2004 to discontinue the sale of fuel to MEC on a consignment basis, a practice that had served RMI, MEC and apparently Mobil Oil well since that practice had been in effect for 13 years. This change in policy required MEC to seek other sources of funding for $6 to $8 million of diesel fuel inventory. Neither MEC nor RMI had the financial reserves readily available to meet this funding requirement.

Added to the fuel inventory funding issue has been the significantly increasing cost of fuel. With delivered fuel that has escalated from $30 per barrel in 2003 to $66 per barrel in 2005 the resulting cost of the fuel component of MEC's electricity has escalated from $.067 per kWh to over $.15 per kWh. MEC's electric rates were hardly high enough to cover fuel costs.

MEC's management, Board and the RMI government were also late in recognizing that world fuel prices would not return to their 2003 levels. Nor did they adequately recognize the financial strain on the MEC budget due to escalating fuel costs. As a result they did not adopt a rate tariff that recognized the increased fuel cost until FY2005 resulting in two years of serious financial losses. Also, MEC had been subsidizing its electric system costs with profits from the sale of fuel to the fishing fleets. The subsidy, in the range of $2 million per year, represented approximately 20% of MEC's electric system revenues. Without funds for the larger volumes of fuel for the diesel fuel tanks, sales of diesel fuel to the fishing fleets declined in 2005 and 2006 resulting in the loss of most of the profits previously enjoyed from the sale of diesel fuel. Therefore MEC had to raise rates to get to a break even cost in its sale of electricity and at the same time pay off significant loans taken out to purchase fuel inventory. The loan payments also include the high interest rates being charged on those loans, especially the 18% per annum interest rate being charged by Mobil Oil.

Throughout this report the challenges facing MEC will be reviewed and options and processes for solutions will be presented. However, before delving into the challenges of MEC, it is appropriate to review the many great accomplishments and benefits of the Marshalls Energy Company. MEC has been a major economic driving force in Majuro and many of the other RMI islands for the past 22 years of its existence. MEC has provided reliable, low cost electricity; it has helped provide the funding and expertise to electrify many outer islands; it has provided highly technical training for countless people and has served as an major economic engine for the economy of Majuro and RMI. The following several paragraphs are intended to help focus on the benefits that MEC has provided over the past 22 years.

2.2. Accomplishments of MEC

2.2.1. Excellent Reliability of Electric Service

MEC has provided reliable electrical service to the citizens of Majuro since its creation in 1984. Although reliability is a relative term, especially in an island environment where corrosion of the electric system, wind, weather, training of personnel and scarcity of replacement parts are all factors working against the operations of the utility. But through all of the challenges, MEC has a history and record of being one of the most reliable electric utilities in the Pacific region. This level of reliability has proved invaluable as it is one of the very first factors that a new business considers when it is reviewing locations to start or open a business; a business that provides jobs and incomes to the citizens of the RMI.

2.2.2. Relatively Low Cost Electric Service

MEC has provided very reasonably priced electric service to the electric customers of Majuro, Jaluit and Wotje. Although many Majuro, Jaluit and Wotje electric customers believe that their electric rates have been very high, when rates are compared to other utilities in the Pacific region, MEC customer's electric rates have usually been 15% to 30% or more lower. MEC has maintained electric rates lower in Majuro than almost any other U.S. affiliated Island in the Pacific region, except possibly Guam. MEC has been able to hold the rates at the lower levels because of the profits from the sale of diesel fuel to the fishing fleets and other entities. Thus MEC's large fuel storage facility in Majuro has been a very valuable asset for the citizens of RMI and particularly for Majuro. In addition MEC has derived small levels of profits from the sale of Liquid Petroleum Gas (LPG) while still providing LPG service at a reasonable cost.

It has been calculated by the MEC staff that there has been over $7,000,000 of profits from fuel sales over the past 15 years that have benefited the electric customers. These fuel sale profits have been made possible because of MEC's and RMI's ownership and operation of the fuel tanks in Majuro. The large fuel storage facility in Majuro has also allowed MEC fuel negotiation advantages that allow for the purchase and shipping of large volumes of fuel resulting in economies of scale. Majuro's strategic geographic location also is a factor in MEC's ability to utilize the fuel storage tanks for the advantage of RMI citizens. Majuro is located strategically over 1,300 to 2,000 miles from other large fuel storage facilities resulting in Majuro being the choice of refueling by fishing fleets and others for a large area surrounding the Republic of the Marshall Islands. Majuro is also strategically located in or near major fishing areas and thus has access to the many fishing fleets operating in the Central Pacific. MEC has utilized these strategic advantages for the benefit of the electric customers and citizens of the Republic of the Marshall Islands.

The electric rates have also been kept relatively low because of MEC management's astute negotiation of past fuel supply contracts. The fuel supply contracts were based on Singapore wholesale prices plus shipping costs plus a fair return on investment to the fuel supplier. MEC also paid careful attention to appropriate market pricing of the diesel fuel for sale to the fishing fleets. There has been criticism of MEC management from both sides of that fuel pricing spectrum. The fuel supplier has felt their share of the profit margin available in the sales price of fuel should be greater. The fishing fleets and other fuel dependent businesses and customers have complained that MEC's fuel contains too much profit. The buyers of the fuel have expressed they believe the fuel should be sold on a fixed formula of purchase price plus a slight margin.

Publicly owned electric utilities such as MEC often exercise this formula based pricing for electric rates. However, MEC as stock company acting in the interest of the citizens of the RMI has rightfully exercised a more private business market pricing methodology for its pricing of the fuel. This has allowed MEC to price fuel at a marginal value that theoretically is slightly lower than alternative fuel supplies, and the profits thus derived from the sale of the fuel has been made available to the customers of MEC and thus the citizens, business and Governments located on Majuro, Jaluit and Wotje. RMI , and thus MEC, has the good fortune of being geographically strategically located in the Western Pacific and RMI had the good vision in the early years of its development to build a very valuable fuel storage facility. MEC has utilized these strategic advantages to help keep electric utility costs lower than otherwise would have been possible.

2.2.3. Substantial Staff Training

MEC has provided substantial training for the crews and staff of the various departments of MEC. These crews have proven that they are able to reliably, effectively and professionally operate the electric utility and fuel service functions in the RMI. Training has been a strong point of the MEC organizational culture. The commitment to training has resulted in other island utilities seeking out MEC personnel to assist them in training their crews and staff. Most importantly this training has allowed many employees of MEC in Majuro and other RMI islands to provide the necessary technical services MEC requires and in return enhance their personal incomes for the benefit of their families and also for the benefit of the economy of the Marshall Islands.

2.2.4. Regional Utility Leadership

MEC has also been a strong supporter of regional organizations and working with other utilities in several forums. This is especially in regards to MEC participation in the Pacific Power Association (PPA) activities, an organization in which the General Manger, Billy Roberts, presently serves as Chairman of the Board of PPA. MEC's work

in promoting development of strong regional forums such as PPA has allowed MEC personnel to attend joint training functions and conferences and learn from their peers in other similar utilities. MEC's participation and support in such organizations has gained regional respect for MEC and the Republic of the Marshall Islands when other utilities come to Majuro to learn special skills such as Diesel Engine Maintenance and Distribution Line Maintenance from MEC personnel.

2.2.5. Provider of Electric Service On Outer Islands

MEC has had a very good program of assisting many of the outer islands with development of electrical power for their citizens. MEC has built and now operates the diesel electric power systems on Jaluit and Wotje as well as the Rongrong diesel power system; the Namdrik solar power system and the Mejit solar electric power system. Although the costs for operations on Jaluit and Wotje are greater than costs on Majuro, MEC has maintained the same electric rates for the outer islands as for Majuro. This has represented costs greater than revenues from Jaluit and Wotje which has been a major benefit to the outer islands due to the scarcity of cash income for basic services such as electricity.

2.2.6. MEC Low Rates Have Aided RMI Economy

Professionals who work in the area of economic development often note that for each dollar that is either saved or earned and made available to the local economy, that dollar is spent to buy goods and services from local businesses. The local businesses and their employees then buy additional goods and services from the local economy. Economic development professionals claim that such recycling of funds throughout a local economy actually multiplies itself by a factor of five (5) to seven (7) times. Using this concept and applying it to the profits received from fuel sales over the past 15 years, profits that have been used by MEC to hold the cost of electricity low and thus let customers keep more of their money for other uses. These funds have most likely be used to purchase goods and services in RMI and thus have been used to stimulate the economy of RMI. Had MEC not passed those profits on to the MEC electric customers, the customers would have had higher electric costs and thus would not have had those funds available for purchasing other goods and services. Using a five (5) times multiplier factor, MEC's lower electric rates of $7,000,000 over the past 15 years is estimated to have contributed to an increased RMI gross domestic product of as much as $35,000,000. Therefore, although there are present problems with the fact that some of the $7,000,000 in fuel sales profits were not set aside as reserves by MEC, the added GDP has undoubtedly been beneficial to RMI's relatively good development and fairly good infrastructure as compared to many other island economies.

2.3. MEC Challenges

2.3.1. Present Challenges

MEC's main challenges are:

1. Electric rates insufficient to cover fuel and operating costs.
2. Lack of working capital to fund fuel inventories
3. High interest short term loans taken out to finance fuel purchases.
4. Reduced profits from fuel sales; loss of revenue to subsidize electric rates.
5. High losses of electricity in the generation and distribution system.
6. Possible change in top management.
7. Limited personnel in top levels for performing financial cost analysis, system operational analysis and electric system engineering.

2.3.2. Process for Solutions

The process for solutions address the challenges with a number of options:

1. MEC Board and RMI Government develop a common vision for desired future of Electric system and diesel fuel sales in RMI.
2. Increase electric rates to cover fuel, operating and depreciation costs.
3. Obtain working capital to fund fuel inventories and pay off existing high interest loans. Possible options.
   a. Seek interim working capital funding from banking sources.
   b. Lease fuel tanks for limited time using fees to pay off short term debt.
   c. Enter into a public/private partnership for operation of part or all of MEC present operation either by contract arrangement or sale of stock.
4. Seek banking assistance to convert short term loans to long term loans.
5. Resume sales of fuel to fishing fleets, with expanded marketing.
6. Conduct extensive energy efficiency review of all aspects of the electric system including power generation plants, electric distribution systems, metering and billing systems.
7. Develop a Leadership continuity plan for MEC.
8. Develop an organizational plan to review personnel staffing and compensation levels, particularly to provide increased support at the top technical levels of MEC, including additional staff and compensation sufficient to retain and attract technical professionals.

2.4. Marshalls Energy Company Structure

2.4.1. Legal structure

MEC is a stock company in the manner of a private corporation. However, with its Board structure of several Government officials, its close ties with the RMI Government, its dependence upon the RMI Government for funding of capital projects and the RMI Government's setting of it electric rates MEC appears very much like a governmental entity. As such it is more responsive to the needs and concerns of the citizens than would be experienced with a private corporation. That close relationship with the public appears to be a characteristic that is valued by the citizens of the Marshall Islands and thus from the organizational structure standpoint, the present charter structure of MEC is satisfactory.

2.4.2. Scope of MEC Operations

The Marshalls Energy Company is essentially "The Energy Company" for Majuro and several other Islands. MEC's basic business is producing and distributing electricity to Majuro, Jaluit and Wotje. However, it also is the major diesel fuel provider in the Marshall Islands as well as the supplier of LPG fuel. Presently the MEC Board is also providing oversight for the Kwajalein Atoll Joint Resources electric, water and wastewater utilities. MEC has a partial connection with the Majuro Water and Sewer Company in that the General Manager of MEC has oversight of MWSC. There are limited staff and services from MEC contracted to MWSC but the two organizations are not merged into a single entity.

Fuel Operations

Fuel is such an integral element of MEC's cost, representing approximately 60% of MEC's cost of electricity, that the control of the purchase price of fuel has no greater impact on any operation more than it does on MEC. Therefore, continuing to keep fuel purchasing, storage and delivery operations under the control of MEC will best serve the economic interests of MEC customers and RMI citizens. This function is so critical to MEC and RMI that a special department should be created within the organizational structure of MEC to manage fuel activities. A highly skilled fuel oil professional should be hired to manage the purchase, storage operations and sale of fuel. Fuel Operations should also include the LPG operation.

Fuel Profits

After the present MEC short term loans are reasonably paid down and a satisfactory level of working capital has been established for the fuel tank operations and for MEC, it is recommended the profits from the sale of fuel should accrue to the RMI Government. Because the fuel tanks are owned by RMI and not MEC and because the regional value of the fuel tanks is due to RMI's geographically strategic location, it is appropriate that all RMI citizens should reap the benefit of the profits from the fuel sales and not just the

electric customers of Majuro. In the future the RMI government could still choose to share profits from fuel sales with MEC but it will be a decision that the RMI government can make as they deliberate the full range of needs of RMI.

Water and Sewer Operations

There is significant synergy and economies of scale possible if MEC were to encompass all electric, water and sewer functions under one organizational and management structure. Provided MEC can keep from being forced, either directly or indirectly from using electric revenues to subsidize the water and sewer functions, it would be appropriate that MEC become a full service combined utility entity with electric, water and wastewater merged into a single operational entity.

KAJUR and Outer Island Utilities

It is also appropriate that that span of jurisdiction extend to the KAJUR system as well as the outer islands. Common management, administration, engineering, billing, accounting, financing and possibly interchange of equipment and personnel can provide significant savings for all utility functions that are now separated into several independent entities.

2.5. Options for Public-Private Cooperation

Two entities have expressed an interest in a Public-Private venture with MEC and RMI in the electric and diesel fuel business sectors. The local firm of Pacific International, Inc. (PII) in partnership with Luen Thai Fishing Ventures, Inc. has expressed an interest in operating the diesel fuel business as well as taking over operation of the electric system. Also SK Networks, a Korean conglomerate company, and the present wholesale fuel supplier to MEC, has expressed an interest purchasing a 51% business interest in MEC and thus its diesel fuel and electrical power businesses. Both proposals were submitted without MEC or RMI issuing a formal publicly advertised Request for Proposals (RFP). Therefore lacking a formal proposal outline the two proposals are substantially different in their scope, assumptions, terms and conditions.

Due to the confidentiality requirements associated with the proposals, the listing of the proposals and analysis are included in a separate document.

In general the proposals request full possession of the fuel tanks and request some limitations on RMI's present $0.08 per gallon import tax and 3% Gross Receipts Tax (GRT). The proposals also propose to bring in new top management and supervisors for the various electric department functions. Because of the Federal Financing Bank loan's mortgage on the RMI fuel tanks, the ownership of the tanks and the electric plant would be retained by RMI.

The proposals in general offer a short term solution to a critical financial situation. There is a real possibility that the long term benefits of the Public-Private Cooperation arrangement will accrue more value to the private party rather than to RMI, MEC and the customers of MEC as compared to a continuation of MEC's present operation.

2.6. Performance Audit

2.6.1. Eight Categories of Review

The Performance Audit of the Marshalls Energy Company included eight separate categories:

1. Operations
2. Human Resources
3. Financial
4. Governance
5. Administration
6. Planning
7. Technical and Construction
8. Public Relations and Marketing

The Consultant developed six to twenty-five questions under each category for a total of 101 questions and graded the findings as either 1)Yes or Always; 2) Usually;
3) Occasionally; or 4) No or Limited. A numerical grade of 99, 89, 79 and 69 was assigned to each answer respectively and a final grade was calculated. MEC's performance was graded for each Category with grades of A, B, C or D and variations thereof.

MEC's overall performance **Grade was a B.**

The Consultant thereafter developed a narrative for each of the questions, explaining the findings and discussed the standards that would normally be anticipated for a utility of MEC's size, location and structure.

2.6.2. MEC Performance Is Satisfactory

MEC has performed in a satisfactory manner in each of the various areas considering the size of the utility, the Island environment and the developmental nature of MEC in the Republic of the Marshall Islands. The major strengths of MEC have been the areas that are most important to the customer and the economy. Those areas are reliability and reasonably low cost electricity. As a modern economy develops the dependence on electricity transitions from one of convenience to one of necessity. MEC has served Majuro well in that transition, assuring that the electricity was reliable and it was made available at a reasonably low cost. Because of these factors, solid economic development

was greatly enhanced in Majuro since all forms of commerce, industry and governmental functions could depend upon the electricity always being available and at prices that were lower than in neighboring islands.

There were two areas that are of concern. Those two areas were the lack of financial reserves and the relatively high system energy losses. These issues will be discussed in the subsequent paragraphs. There are other areas that may need attention, however they were not of a serious detrimental nature to the general operation and good service provided by MEC. Most of the other areas needing some attention were administrative functions that should be addressed as MEC goes forward and grows into a more formalized operation in the future rather than the more informal basis as is often the practice in the development of a new utility.

2.6.3. No Financial Reserves

There are certain areas where MEC could have performed differently which would have helped prevent the recent financial crises. However, these issues may not have been totally within the control of MEC. The main area of concern has been the lack of financial reserves. MEC did not have the financial reserves that it required when Mobil Oil suddenly discontinued its long established policy of providing diesel fuel on a consignment basis. This resulted in MEC being required to fund the cost of inventory and MEC did not have the reserves to do so.

However, having significant financial reserves may have been a proper management goal, it may not have been possible for MEC to set aside reserves since rates are under the jurisdiction of the RMI Government. There has always been political pressure from the customers on the RMI Government and thus on MEC Board and staff to keep the electric rates as low as possible. In a developing economy like Majuro many customers are hard pressed to find significant funds in their budget to pay for higher cost electricity. It is often very difficult to justify to customers the reasons to raise electric rates just in order to set aside financial reserves in anticipation of future emergencies or construction projects, especially when many of the customers are having difficulty in covering other basic costs.

Prudent financial management should establish electric rates sufficient to cover the cost of depreciation of the physical assets of the utility system. Depreciation is the annual cost of the "wearing out" of the utility's facilities. MEC's physical facilities were initially paid for by loans, U.S. Compact Funds and Grants, as well as gifts from other countries. Funding capital assets in this manner does not require operating cash from the electric utilities annual budget. Therefore to recognize and recapture the cost of the capital assets, auditors assign depreciation costs to operations and it is standard practice to set electric rates sufficient to cover depreciation costs, even though no cash is expended for depreciation in the year it is charged. The cash collected for depreciation is often placed in a Replacement and Renewals Fund to be used for future construction projects or system replacements when the present facilities wear out.

At MEC two problems were discovered regarding depreciation issues. First, much of MEC's original assets, such as the fuel tanks, Power Plant Number One and the initial distribution system's financial cost do not appear to have been placed on the MEC financial books. Therefore, according to the staff, there was no depreciation cost accounting charged to the annual operating budget and thus no attempt was made by MEC, or perhaps even recognized, to set aside financial reserves for the day when the fuel tanks, Power Plant Number One, and other initial electric system facilities would need to be replaced. The second issue was that when Power Plant Number Two's financial cost was placed on MEC's financial books, no attempt was made to increase the electric rates sufficient to cover the depreciation costs of the plant.

There were covenants included in the loan obtained from the Federal Financing Bank (FFB) that were intended to require MEC to raise electric rates sufficiently to cover such costs as deprecation but MEC did not raise rates sufficiently to meet the covenants. MEC utilized profits from the sale of diesel fuel to attempt to meet annual operating cash costs, but this did not adequately cover depreciation costs, which are not a cash expense in the year it is charged.

There may have been less obvious reasons for MEC not raising rates to cover depreciation and to establish appropriate financial reserves. It was reported that governmental authorities expressed that if MEC did develop extra profits or cash surpluses, that the RMI government would consider those revenues as being available to the RMI for use in other basic public services. Therefore, there was a disincentive for MEC management to seek higher electric rates just to build up financial reserves.

2.6.4. System Electrical Losses

Another area of concern is the extent of the energy losses from the electric system. Energy losses occur in a number of areas in an electric system. In every electric utility there are energy requirements in a power plant to run water pumps, radiators, ventilating fans, lighting, fuel oil cooling pumps, air conditioners for sensitive control systems, etc. Energy uses in a diesel power plant are normally in the 3% to 5% range of total generator output. MEC has energy uses in the power plant in the range of 6.8% to 7.7%. Additional analysis is necessary to resolve the exact level of station service energy use since conflicting operational data have indicated both figures.

The electric distribution system has normal inherent technical losses due to resistance in the electrical wires; energizing energy for the customers transformers; unmetered or unaccounted for street light usage; leakage of energy in underground and overhead electrical wires due to deteriorated underground cable or trees touching overhead power lines. There are also losses at the customer's meters caused by inaccurate meters or meters that have not been connected correctly. Unfortunately, there are often losses due to theft by customers. The losses on island distribution systems are normally in the 8% to 10% range. MEC has distribution system losses in the 17% to 22% range.

There are some electric system losses that MEC can control and there may be some that will not be able to be addressed without substantial capital expenditure. There may be losses in the Power Plant Number One that relate to the original design, which was done in the late 1990's when fuel costs were low and certain design considerations for plant energy efficiency were not as critical as it is today with $2.00 per gallon diesel fuel. There may be some losses in the electrical distribution system that will be very difficult to reduce. Such losses could be leakage in the 20 year old, 22 mile long underground cable to Laura, or the oversized transformers that appear to exist on the distribution system. It is often a practice in a new utility to install larger transformers than necessary with the expectation of load growth. When growth does not occur, an oversize transformer still can represents up to as much as 2% losses on its size, regardless that only a small percentage of its capability is needed.

Metering problems should be correctable without significantly high expenditures. An aggressive testing of all large commercial and governmental meters should be relatively inexpensive and there are often losses found in incorrect connections or partially failed meters.

2.6.5. Other Performance Issues

There are other, mostly administrative, technical and bureaucracy issues where MEC did not grade highly that should be reviewed. But many of those issues may be more important for the future of MEC's development rather than a reflection of less than standard performance in the past. In a smaller developing utility such as MEC, the main focus is rightfully on reliability, low cost and a good work force. MEC has met those essential criteria in a good manner. The myriad of detailed issues in the areas of administrative, governance, human resources, and finance that are standard practice that become institutionalized as a utility matures are often handled in a much more informal manner in the early years of a developing utility. Therefore, in areas where MEC may have had a lower score, this may not mean there was a serious deficiency but rather that the issue was handled in a more informal manner. These are areas that in the future a more formalized manner of handling the issue may be appropriate.

3. FINDINGS

1. Electric system financial losses for FY2005 were $5.8 million.

2. Electric system financial losses for FY06 estimated to be near $6 million.

3. Net worth of MEC at end of FY2005 was $793,000.

4. Estimated Net Worth of MEC at end of FY2006, negative $5 million.

5. Electric sales for FY2006 were 56.57 kWh.

6. Electric revenues, FY06 of $11.47 million per year or $.203 per kWh.

7. Cost of electric service for FY06 including interest on BOG loans ($110,000) & Mobil loan ($1,100,000); fuel $10.2mil and other ($6.5m) including RUS debt payments are estimated to be $17.9 million.

8. Electric costs of $17.9 m.; sales = 56.57 mil kWhs; cost per kWh = $.317/kWh.

9. Total Generation FY06 - 79.08 million kWh, FY2006.

10. KWhs delivered to Distribution system FY06 - 72.97 million kWh.

11. Energy delivered to Customer Meters – 56.57 million kWh, FY2006;
    Energy losses in distribution system – 16.4 million kWh; 22.5% losses;
    Standard utility system losses – 8% to 10%.

12. Power plant engines burned 5.0 million gallons of diesel fuel in FY06;
    Engine efficiency was 15.82 kWh per gallon;
    Power station efficiency was 14.6 kWh per gallon;
    Overall system fuel efficiency was 11.3 kWh delivered to customers for each gallon of fuel burned.
    Power station energy use was 7.7% of power station production;
    Standard utility station service energy use – 3% to 4%.

13. Outstanding Mobil loan of Sept.05; Initial amt.- $7.8 million, 24 mo. 18% Balance as of Nov. 2006 was $5,090,000. Payment of $320,000/mo to Apr. 08

14. Outstanding Bank Of Guam loan of Mar/Apr 06; Initial amounts $1.6m/$.4m.;
    Terms – 36 mo.; 10% int.; mo. Payments approx. $64,000/mo. to Feb. 09;
    Balance as of Nov. 2006 was $1.55 million.

15. Revolving credit loan, BOG of up to $3,000,000 at 10%, interest, paid monthly.

16. Estimated FY2006 interest payments for Mobil ($1,100,000), and BOG ($110,000) loans for total of $1.2 million.

17. Estimated Principle Payments for FY2006 on loans with Mobil ($2.95mil) and with BOG ($350,000) will total $3.3 million.

18. LPG sales are about $430,000 per year, costs are about $215,000 per year,
    Margin is $215,000 per year.

19. Prior to July 2005 MEC was selling approx. 800,000 gallons of fuel per month to fishing fleets and others. Profits were approx. $2 million per year.

20. Mobil Oil regional and corporate goals plus increasing financing costs associated with fuel inventory in MEC tanks plus regional market practice of discontinuing consignment fuel sales resulted in Mobil Oil advising MEC they would be discontinuing furnishing fuel on consignment basis in the new 2004 fuel contract.

21. MEC sought fuel supply proposals with consignment terms but were unable to secure consignment terms with Mobil Oil other fuel suppliers in April 2004.

22. From summer of 2004 to summer of 2005, after fuel contract had expired in mid 2004, Mobil Oil continued to provide MEC with four loads of fuel on consignment basis while negotiating delivery price margin before negotiations broke down in July 2005.

23. Fuel supply contract negotiation impasse in 2004-2005 that resulted in discontinuing the long standing Mobil-MEC relationship appeared to be related to MEC contesting the fixed amount price of Mobil Oil's markup in the new contract proposed in early 2004. Continuation of the consignment arrangement would have been appreciated but MEC was not able to get any other bidders to offer a consignment arrangement either, therefore the only major issue that remained was the size of the markup. The markup proposed by Mobil Oil for 2004 contract was a slightly higher percentage than the 2001 fuel supply contract markup. In 2001 the markup was approximately 18% of the then MOPS price of fuel which was approximately in the $0.70 per gallon range. In 2004 the markup proposed by Mobil Oil was approximately 25% of an estimated MOPS price of the projected 2005 and future price range of approximately $1.10 per gallon range. With MOPS price of $1.42 per gallon ($60/bbl) the markup would have represented 19.5%, a percentage figure very near the 2001 contract markup and a fuel price that did occur through much of FY2005 & Fy2006. Although the 2004 fixed markup cents per gallon number was 2.3 times greater than in 2001 the percentage of markup was only 8% higher. The 25% markup on cost was apparently in line with Mobil Oil's other corporate earnings goals as evidenced by a review of ExxonMobil's 2004 financial statements wherein revenues were $298 billion and cost of revenue (sometimes considered cost of product) was $163.5 billion and operating income was $42.6 billion. Calculating net earnings ($42.6 billion) as a percentage of cost of revenue ($163.5 billion) results in a calculation equal to 26% which is very near to Mobil Oil's requested markup of 25%. Although these markups seem high to managers of publicly owned utilities who usually price electric rates at actual "cost to serve" with little or no profit included, such markups are very common and expected in the private sector.

4. MAJOR RECOMMENDAITONS

4.1. Electric System Structure

Maintain MEC as an RMI majority owned utility, while taking advantage of appropriate economy of scale options and joint ventures.

- The advantages to RMI of a viable and robust MEC are significant. Care should be taken not to dilute RMI's ownership share to the point that RMI no longer has the principal say in the direction of the utility.
- Bringing the Majuro Water and Sewer Company (MSWC) more fully into alignment with MEC provides both operational and governance economies of scale to both operations.
- The use of joint ventures must recognize the significant public investment in MEC and not allow short term issues to overshadow the long term value of MEC assets.

4.2. Fuel Tank Operations

Maintain Fuel Tank Operations under the MEC, and develop a separate MEC fuel subsidiary.

- Because of their significant use of fuel for generation, MEC has the most significant interest in operating and maintaining a profitable and favorable cost fuel operation.
- The fuel tanks are a proven source of revenue, and as such should remain a significant part of the MEC operation. Because it is a substantially different endeavor than providing electricity or water it requires a different skill set and full-time expertise and oversight.
- Fuel tank operations – expenses and revenues – should be accounted for separately from MEC operations, allowing a cogent public policy decision as to the use of the proceeds.
- Fuel operations should be extended to the Islands of Ebeye, Wotje and Jaluit to take advantage of the bulk purchasing and economies of scale.

4.3. Fuel Sales Profits

Utilize Near-Term Profits from Diesel Fuel Sales to repay MEC debts.

- MEC has incurred significant near term debt in order to maintain its fuel supply in the absence of a consignment agreement with Mobil.
- These loans must be repaid and a cash account created to allow for future purchase of fuel.

Utilize Mid-Term Profits to build a MEC rate mitigation fund reserve.

- Once the fuel operation is back on a cash basis then a significant portion of the profits should be utilized to create a fund that would be available for use in the event of other world events that impact operations in the short-term.
- Use of rate mitigation funds or more traditional "contingency accounts" is a standard industry practice, which if it had been utilized at MEC would have prevented much of the recent concerns.

Utilize Longer-Term Profits from Diesel Fuel Sales for the benefit of RMI.

- From a public policy perspective net profits (after reasonable MEC expenses) from the sale of fuel belong to the entire Republic, not just to customers of MEC.
- If the Parliament wishes to subsidize electric rates with the profits from fuel sales that is perfectly allowable, and the decision should be transparent.

4.4. Management

Maintain MEC operational structure while enhancing management capabilities.

- MEC has a long history of being well managed. Reasonable people can disagree about the public policy position of subsidizing electric utility rates out of fuel sales profits, but this was a well known and supported stance for many years.
- With the change in the General Manager additional top level staff must be recruited and trained. Island operations are certainly unique and this uniqueness must be recognized when recruiting and retaining individuals.
- It is imperative that increased peer contact opportunities be developed for key supervisory and professional personnel.

4.5. Electric System Energy Losses

Conduct a separate and immediate study of operational and maintenance losses.

- Station service and distribution system losses are well outside standard operational norms. Immediate and significant cash savings are available with rapid payback of appropriate capital and operational investments.
- Examine the public policy of providing free or reduced electric service to certain individuals and customers. If the public policy of these subsidies is defensible they should be made in other manners so that the true cost can be determined.
- Examine the appropriateness of the public policy of land owner subsidies. Use of Rights of Way (ROW) should be determined and fixed appropriately.
- Examine the use of non-metered street lights on private property.
- Examine the use of street lights as a public safety tool and fund appropriately from RMI resources.
- Examine the use of prepaid meters for lifeline or other customers who have difficulty in budgeting for electric bills.

4.6. Human Resources

Conduct and Implement a Formal Island-Appropriate HR System and Pay Plan

- Modern Human Relations and Pay Structures would eliminate pay disparities, ameliorate operational disincentives for key managers and mitigate potential adverse claims of discrimination.

4.7. KAJUR, Outer Island Utilities and Alternative Energy

KAJUR

- Consolidate Ebeye's KAJUR utility operations with MEC's consolidated utility while maintaining separate cost centers for Majuro and Ebeye.

Outer Islands Electrification and Utility Services

- Utilize MEC's management, financing capability, technical & organizational capabilities to assist in development of utility services on outer islands.

Incorporate RMI Alternative Energy activities under MEC.

- Aggressive utilization of alternate energy source is critical to RMI, especially on the outer islands. MEC has the expertise and experience to effectively administer and maintain these systems.
- These alternate sources should be a separate cost center and should be self sufficient, or appropriately subsidized by RMI.

5. STRATEGIC FINANCIAL PLANNING FOR MEC

The MEC Strategic Planning Process

Introduction

Quality strategic planning is one of the most critical steps that effective organizations take on their path to greatness. Because visioning the future is so critical, good boards ideally lead the process with intensive periodic retreats that establish and then follow-up on key strategic goals and objectives. For MEC, some of the board members are relatively new, and this was their first attempt at this process.

In general, once the board has done its work, professional staffs ensure fulfillment of the board's desires through the establishment of achievable actions that tie directly to the goals and objectives. Both parties, board and staff, then monitor accomplishments to keep the organization on the path to excellence.

The Outcome Based Concept

Just as a house is built brick by brick on a solid foundation, so too are great organizations built on a series of small victories that lead to overall achievement of their vision. This step by step creation of planning horizon "Outcomes" follows the maxim of Dr. Stephen Covey, "Begin with the end in mind." Each goal flows from and lends accomplishment to a final outcome that has been preordained and predefined by the board.

Strategy Development

The first step for the MEC in the development of their Outcomes was to examine the current *Vision of the Republic of the Marshall Islands* and to discuss the question: "If Money Were Not an Issue, What Role Would You Like to See MEC Play in the Future of the RMI?"

This conversation led to a mission and vision and values conversation for MEC that will enable the organization to prepare for the future, while setting aside the very real and pressing financial issues the board is certainly facing.

This process relied heavily on each board member's knowledge of the organization's dreams and aspirations. Essentially the board members were asked, "What is it that the organization would like to accomplish at some point in the future?" And, "When is that future to be achieved?" That is, what is the planning horizon for MEC?

Strategy Analysis

Once the Mission, Vision and Values were crafted, then a candid analysis of the organization's ability to perform was discussed. This "State of MEC" examination included the strengths, weaknesses, opportunities and threats that currently exist, or that could reasonable exist within the planning timeframe. In addition, questions such as "what is MEC's ability to react to major shifts in technology, markets, competition or the regulatory environment?" were examined.

The purpose of this is to establish for the board that at a base level MEC is sustainable long-term, especially in terms of continuity in the face of natural or man made disaster.

Strategic Objectives

Armed with the Mission, Vision and Values, and the Strengths, Weaknesses and Opportunities and Threats the Board was able to articulate in a critical few statements, written in the present tense, as if they were already achieved, their Outcomes. Once the Outcomes were known, and the resources articulated then the whole was broken down into a series of key strategic objectives.

Strategy Deployment

This stage dealt with the critical conversation of how the Organization converts the strategic objectives into specific action plans, and sets key performance indicators that allow the Board to track deployment. Largely a staff function, Board direction in timeline development and monitoring progress is critical. At this point obviously much more organizational planning work must be done. Essentially the question must be asked, "What smaller accomplishments must be achieved in order that larger Outcomes can be assured, and on what timeframe?

Because of the nature of this engagement there are a series of "Notes" included in this section. These Notes are comments that the consultants are providing for thoughtful consideration, and are based on their interaction with the stakeholders in the process.

Conclusion

The MEC Board worked very hard in a compressed time environment to develop three key Outcomes: "MEC is a Best Practice Island Utility, MEC is Financially Stable and Growing, and MEC is recognized as 'THE' Supplier of Energy in the Marshalls." Certainly much work remains for these statements to be true in the present tense. None-the-less, MEC is to be congratulated for the hard work and vision of its Governing Body.

5.1. Marshalls Energy Company Strategic Plan -- Vision for the Future

5.1.1. Our Mission

– **MEC is a Best Practice Island Utility, providing highly reliable, competitively priced services to its customers**

5.1.2. Our Vision

– MEC Provides Shareholder Value

MEC is a Best Practice Island Utility

We maximize our resources
We utilize our extensive management expertise (Kwajelin & other areas)
We invest in Research and Development
We continuously improve efficiency
We appropriately replace and upgrade capital assets
We examine economies of scale of management (Water, Sewer, SW, etc.)

MEC is Financially Stable and Growing

We prudently utilize debt
We have a decreased reliance on fossil fuels
We capture appropriate economies of scale

MEC is recognized as "THE" Supplier of Energy in the Marshalls

We purchase economic quantities of fuel to keep our prices low, allowing us to keep more dollars at home
We utilize other energies as appropriate (Bio, Wind, Solar, Copra Oil)

Our Stakeholders

Owners
Customers
RMI Government
Local Community (Majuro)
Suppliers
Private Businesses
Future Generations

5.2. MEC Strengths, Weaknesses, Threats, Opportunities

The Marshalls Energy Company

Strategic Planning Process

Strengths

What are the Best Things about MEC?

What are we as a Board Proud of?

- **Outstanding facilities**
- **Excellent maintenance and operations**
- **Excellent assets**
- **Outstanding reputation**
- **Outstanding and well trained staff**
- **High reliability**
- **Low priced energy**
- **Economic return to RMI via low price**
- **Diversity (more than power, i.e. engineering, personnel, etc.)**
- **Excellence in spite of remoteness**
- **High employment of islanders**
- **Enabling of other industries**

Weaknesses

(What are we as a Board most Worried about?)

- **Deferred maintenance**
- **Weak cash flow**
  - **Receivables**
- **Lack of full utilization of resources**
- **Lack of reserves**
- **Poor credit ratings**
- **Availability of future generation**
- **Generation stability**
- **Reduction of reputation**
- **Lack of predictability of regulation**
- **Volatility of fuel prices**
- **Lack of training and continuing education for management**

Opportunities

What is there in the Operating Environment that could Benefit MEC?

- **Attract foreign investment**
- **Make foreign investments**
- **Examine landowner subsidies**
- **Review rate equity (Cost of Service)**
  - **Lifeline, Other, Demand**
- **Understand and reduce line loss (unbilled)**
- **Board Governance**
- **Utilize Partnerships**
- **Develop alliances**
- **Utilize Key Account Representatives**
- **Bulk ordering**
- **Develop incentives for fishing vessels**
- **Facilitate "By Catch" processing**
- **Create a "one stop" shop for fueling**
- **Promote a fish loining plant**
- **Develop MEC's strategic location**

Threats

What could keep us from achieving the Vision of the Board?

- **Global political instability**
- **Local ability to raise rates**
- **Volatile fuel prices**
- **Lack of working capital**
- **Poor cash flow**
- **Weather preparedness**
- **Emergencies**
- **Remoteness**
- **Lack of depth in management**
- **Major changes in the affordability of power / energy**
- **Major changes in the agreement with RMI**
- **Big companies "taking over"**
- **High seas refueling**
- **Fisheries changes**

5.3. MEC as a Best Practice Island Utility

1) Administration

a) Develop a management support structure, including admin support and training

Note: MEC has for many years operated with a very lean management structure, and with insufficient funds for training has not been able to invest adequately in training and peer interaction for key managers. In a time of management change this leaves MEC vulnerable.

2) Conservation

a) *Educate customers on the value of insulation, energy efficiency and building* codes

Note: Majuro customers have been used to relatively low cost electricity, and as a result use a much higher than average kwh. By educating customers, especially commercial customers, on the value of conservation measures MEC should be able to ease the transition to the necessarily higher rates needed to operate with a margin.

3) Debt

a) Restructure short-term debt to eliminate/reduce high interest carrying charges

Note: MEC is currently obligated to very high interest "short-term" debt. This significantly hampers MEC's ability to operate. Immediate and significant progress needs to be made to ameliorate this constraint.

4) Equipment

a) Review insurance on existing equipment and assets

Note: In light of the recent fire it is imperative that current insurance policies be examined. Further, it is also important that resolution of the current settlement/coverages be encouraged.

b) Review and revise as necessary equipment maintenance schedules

Note: Reliability is a key customer value, and all appropriate measures must be taken to ensure that equipment is evaluated and maintained.

5) Fuel Supply

a) Must have a Stable Fuel Supplier

Note: MEC is highly reliant on a stable fuel supply for reliability. Any interruption or suspense in the provision of fuel is not acceptable and lowers customer confidence. This is a very high priority for management.

6) Operations

a) Reduce system losses (Unbilled generation, station loss, line loss, etc)

Note: MEC system losses are much higher than comparable utilities. Sources of these losses must be analyzed and mitigated. This will warrant a separate and immediate study of its own.

b) Improve operating efficiencies

Note: MEC operates independently of other utilities. As such there is much investment in personnel and equipment that is only marginally used. Potential economies of scale exist and should be aggressively explored.

7) Reliability

a) Maintain / improve reliability

Note: MEC has a long history of reliability. With the reality of aging plant and equipment, as well as aging distribution lines this reputation may suffer without significant effort.

b) Implement a capital replacement strategy with transformers, meters etc.

Note: Many MEC transformers, meters and appurtenances are approaching or have exceeded normal useful life, as is the main underground transmission line. Immediate analysis of the equipment is necessary and a plan for replacing these on a systematic basis is needed. Appropriate long-term debt should be utilized.

5.4. The Future Plan for MEC

5.4.1. MEC - A Financially Stable and Growing Utility

1) Business Model

a) Review the MEC business model

i) Fuel operations

ii) Electricity

iii) In house vs. contract

Note: This item is covered extensively elsewhere in this report. It is important to note that the MEC business model is a key determinant in the long-term viability of the enterprise.

2) Cash Flow

a) Examine receivables and age them appropriately

Note: MEC is not as aggressive as most utilities when it comes to collecting past due accounts. Consequently much of the "receivables" shown on the financial statements are substantially past normal collection periods and it may be unlikely that they can be recovered. This analysis is important to accurately reflect the long-term fiscal health of the enterprise.

3) Debt

a) *Research and implement appropriate debt structure*

b) *Eliminate or Reduce High Interest Short-term debt*

c) *Develop an appropriate long-term (5-10-15-20 year) debt program*

Note: MEC has not utilized long-term debt financing in the past. Because of the long life span of utility assets this is a perfectly legitimate way for a utility to spread its costs to then current users of the system.

4) Economies of Scale

a) *Utilize MEC expertise to capture economies of managing and operating other Island utilities such as MWSC*

Note: MEC has significant management and operational expertise. There are certainly efficiencies that are to be gained by co-operating similar utilities. More experienced leadership and cross training of personnel are examples of these economies of scale.

b) *Examine feasibility of utilizing MEC expertise in contracting for operations of utilities in other islands*

Note: Because the Majuro operation is relatively well staffed and maintained, it makes sense to utilize this expertise in the extension of services to other parts of the RMI. Priced correctly this would be a win-win initiative.

5) For Profit Status

a) *Take advantage of MEC's government charter as a for-profit company*

Note: MEC has a unique charter that provides flexibility of operation and financing. Recognition of this fact by the Board and Management is critical to exploring appropriate endeavors and financing.

6) Fuel

a) *Utilize appropriate fuel resources*

Note: Fuel is covered extensively elsewhere in this report.

b) *Decreased reliance on fossil fuel*

Note: With oil in the $60 to $70 per barrel range alternate sources of revenue begin to make economic sense. Especially in light of the production of copra oil on the island it behooves MEC to partner with or undertake direct examinations of the feasibility of utilizing other fuel resources.

7) Rates

a) Immediately institute a rate hike to bring MEC to "break even" on fuel and ops

	Current	***Required***
i) Residential	*20.5*	*24.5*
ii) Commercial	*25.5*	*29.5*
iii) Government	*25.5*	*30.5*
iv) Lifeline	*20.0*	*21.0*

b) *Perform a Cost of Service Study*

c) *Implement rate strategy*

d) *Review landowner subsidies*

e) *Develop a predictable rate regulatory environment*

f) *Cabinet to delegate rate adjustment to MEC Board*

i) *Base*

ii) *Fuel Adjustment*

Note: MEC has been experiencing an operating deficit for some time. Utilization of one time revenues from Compact Funds and the ongoing profits from fuel sales have held electric rates artificially low. As painful as significant rate increases are it is absolutely imperative that rate adjustments begin to put the utility at least on a break even operational perspective.

5.5. MEC - Recognized as "THE" Supplier of Energy in the Marshalls

1) Alternative Fuels

a) Wind, Solar, Copra Oil, Bio, Hydro

Note: As indicated elsewhere, with oil in the $60 to $70 per barrel range alternate sources of revenue begin to make economic sense. Especially in light of the production of copra oil on the island it behooves MEC to partner with or undertake direct examinations of the feasibility of utilizing other fuel resources.

2) Bulk Purchases

a) Take Advantage of Fuel Storage capability to keep MEC supply costs to minimum available

b) Coordinate purchases with others (RMI government, other islands, other agencies, commercial entities, etc.)

Note: MEC is a large operation by virtually any island standard, and it should seek to maximize its size advantage in every area possible. Purchasing in bulk or in cooperation with other entities is an important step to take to ensure that costs are held to a minimum.

3) Conservation

a) *Demand Management*

Note: While it is not intuitive, there is a very real value to MEC to encourage conservation and the efficient use of energy. By avoiding having to generate fuel use is lowered and the life of generating assets prolonged. Avoided costs are real. In addition when customers are conserving and building appropriately more money is injected into the economic system, resulting in increased economic activity and standards of living.

4) Marketing

a) Fishing Fleets

b) Commercial Key Accounts

Note: Marketing is a key operation in any enterprise, and that is especially true in the fuels and electric markets. Customer relations in an island environment is quite important as small customers can become large over time. Even in a relatively monopolistic environment courting customers and treating them well is simply good business.

6. MEC / RMI NEXT STEPS – RECOMMENDATIONS AND SCHEDULES

In order to implement the recommendations in the report, MEC and the RMI need to take some immediate steps. Recognizing that these are actions that contain significant public policy decisions, the following recommendations are simply a jumping off point for officials at MEC and RMI to begin strategizing.

Note that fuel has been well discussed throughout the report and no next steps are provided separately here.

6.1. Electric System

- **Maintain MEC as an RMI majority owned utility, while taking advantage of appropriate economy of scale options and joint ventures.**
    - The advantages to RMI of a viable and robust MEC are significant. Care should be taken not to dilute RMI's ownership share to the point that RMI no longer has the principal say in the direction of the utility.
        - **A. A carefully worded RFP (Request for Proposals) should be developed and submitted to as broad an area of interest as possible. Key criteria such as ownership, governance, performance measures and accountability need to be explicitly addressed.**
        - **B. Once the RFP is developed it should be disseminated as widely as possible.**
        - **C. Evaluation of the RFP should be done according to a predetermined scoring system to eliminate any bias and to provide for transparency and accountability.**
        - **D. A negotiating team should be identified and fully versed in the proposal.**

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A		XXXX		
B		XXXX		
C			XXXX	
D			XXXX	XX

    - Bringing the Majuro Water and Sewer Company (MSWC) more fully into alignment with MEC provides both operational and governance economies of scale to both operations.
        - **A. In order to allow for separate cost centers for MWSC and MEC a full analysis (or at least agreement) of assets and liabilities for MWSC needs to be undertaken.**

B. It is envisioned that a complete merger would take place with future economies achieved through attrition and cross training.
C. Surplus equipment should be identified and sold or shared appropriately.
D. Billing and Office support functions should be analyzed with a view toward productivity and location.

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A		XXXXXXXX	XXXXXXXX	XXXXXXXX
B				XXXXXXXX
C				XXXXXXXX
D				

FY2008	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A	XXXXXXXX			XXXXXXXX
B	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
C	XXXXXXXX			
D		XXXXXXXX		

- The use of joint ventures must recognize the significant public investment in MEC and not allow short term issues to overshadow the long term value of MEC assets.

- Consolidate Ebeye operations with MEC while maintaining separate cost centers for Majuro and Ebeye.
  A. In order to allow for separate cost centers for Ebeye and MEC a full analysis (or at least agreement) of assets and liabilities for Ebeye needs to be undertaken.
  B. A MEC senior staffer needs to be identified to head up the Ebeye operation.
  C. Billing and Office support functions should be analyzed with a view toward productivity and location.

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A			XXXXXXXX	XXXXXXXX
B		XXXXXXXX		
C				XXXXXXXX

6.2. Fuel Tank Operations

- **Maintain Fuel Tank Operations under the MEC, and develop a separate MEC fuel subsidiary.**

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007		XXXXXXXX	XXXXXXXX	XXXXXXXX

  - Because of their significant use of fuel for generation, MEC has the most significant interest in operating and maintaining a profitable and favorable cost fuel operation.
  - The fuel tanks are a proven source of revenue, and as such should remain a significant part of the MEC operation. Because it is a substantially different endeavor than providing electricity or water it requires a different skill set and full-time expertise and oversight.
  - Fuel tank operations – expenses and revenues – should be accounted for separately from MEC operations, allowing a cogent public policy decision as to the use of the proceeds.
  -

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007				XXXXXXXX
Fy2008	XXXXXXXX			

  - Fuel operations should be extended to the Islands of Ebeye, Wotje and Jaluit to take advantage of the bulk purchasing and economies of scale.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007				XXXXXXXX
FY2008	XXXXXXXX			

6.3. Fuel Sales Profits

- **Utilize Near-Term Profits from Diesel Fuel Sales to repay MEC debts.**
  - MEC has incurred significant near term debt in order to maintain its fuel supply in the absence of a consignment agreement with Mobil.
  - These loans must be repaid and a cash account created to allow for future purchase of fuel.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2008	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2009	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2010	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

- **Utilize Mid-Term Profits to build a MEC rate mitigation fund reserve.**
  - Once the fuel operation is back on a cash basis then a significant portion of the profits should be utilized to create a fund that would be available for use in the event of other world events that impact operations in the short-term.
  - Use of rate mitigation funds or more traditional "contingency accounts" is a standard industry practice, which if it had been utilized at MEC would have prevented much of the recent concerns.

FY2009	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
FY2010	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

- **Utilize Longer-Term Profits from Diesel Fuel Sales for the benefit of RMI.**
  - From a public policy perspective net profits (after reasonable MEC expenses) from the sale of fuel belong to the entire Republic, not just to customers of MEC.
  - If the Parliament wishes to subsidize electric rates with the profits from fuel sales that is perfectly allowable, and the decision should be transparent.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2010	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

6.4. Management

- **Maintain MEC operational structure while enhancing management capabilities.**
  - MEC has a long history of being well managed. Reasonable people can disagree about the public policy position of holding electric rates below their cost, keeping minimum financial reserves and subsidizing electric utility rates out of fuel sales profits, which is the major issue that has led to the current financial crises, but this was a well known and supported stance for many years. A decision regarding continued service by the

existing General Manager or selection of a successor General Manger is needed as soon as practical.

-

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007		XXXXXXXX	XXXXXXXX	

- Regardless whether there is a change in the General Manager additional top level staff must be recruited and trained since there are too many functions required for the present number of personnel. Island operations are certainly unique and this uniqueness must be recognized when recruiting and retaining individuals.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007		XXXX	XXXXXXXX	XXXXXXXX

- It is imperative that increased peer contact opportunities be developed for key supervisory and professional personnel.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007			XXXXXXXX	XXXXXXXX

6.5. Electric System Energy Losses

- **Conduct a separate and immediate study of operational and maintenance losses.**
  - Station service and distribution system losses are well outside standard operational norms. Immediate and significant cash savings are available with rapid payback of appropriate capital and operational investments.
    - **A. Develop a review team charged with identifying losses and proposing recommendations to correct them.**
    - **B. Conduct appropriate cost/benefit analysis on the recommendations.**
    - **C. Implement as many of the loss reduction mechanisms as possible.**

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A		XXXXXXXX		
B		XXXXXXXX		
C			XXXXXXXX	XXXXXXXX
FY2008	1ST QTR	2ND QTR	3RD QTR	4TH QTR
C	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

- Examine the public policy of providing free or reduced electric service to certain individuals and customers, including contract employees. If the public policy of these subsidies is defensible they should be made in other manners so that the true cost can be determined.
    - **A. Develop a review team to determine exactly who is begin given free or reduced electric service.**
    - **B. Determine the appropriateness of the subsidies.**
    - **C. Analyze other methodologies of providing the benefit.**

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A		XXXXXXXX		
B		XXXXXXXX		
C			XXXXXXXX	

- Examine the appropriateness of the public policy of land owner subsidies. Use of Rights of Way (ROW) should be determined and fixed appropriately.
    - **A. Research appropriate mechanisms to acquire Rights of Way or Easements for use of property for utility purposes.**

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A				XXX

- Examine the use of non-metered street lights on private property.
    - **A. Develop a review team charged with identifying all of the meters and their locations and ownerships.**
    - **B. Design a program to allow non metered lights to become metered or disconnected.**

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A		XXXXXXXX		
B			XXXXXXXX	XXXXXXXX

- Examine the use of street lights as a public safety tool and fund appropriately from RMI resources.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007			XXXX	XXXXXXXX

- Examine the use of prepaid meters for lifeline or other customers who have difficulty in budgeting for electric bills.
    A. **Many other utilities effectively use prepaid meters for lifeline customers and those who desire to have a greater degree of control in their utility usage.**
    B. **Research other utility's use of the meters and develop a feasible roll out schedule and implementation schedule for MEC. Utilize DOI Grants for funding if possible.**

FY2007	1ST QTR	2ND QTR	3RD QTR	4TH QTR
o			XXXXXXXX	XXXXXXXX
B			XXXXXXXX	XXXXXXXX
FY2008	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
FY2009	XXXXXXXX	XXXXXXXX	XXXXXXXX	Complete Sept 09

6.6. Human Resources

- **Conduct and Implement a Formal Island-Appropriate HR System and Pay Plan**
    - Modern Human Relations and Pay Structures would eliminate pay disparities, ameliorate operational disincentives for key managers and mitigate potential adverse claims of discrimination.
        A. A carefully worded RFP (Request for Proposals) should be developed and submitted to 3 to 5 prequalified firms who specialize in this type of work.
        B. Evaluation of the RFP should be done according to a predetermined scoring system to eliminate any bias and to provide for transparency and accountability.
        C. A negotiating team should be identified and fully versed in the proposal.

FY2008	1ST QTR	2ND QTR	3RD QTR	4TH QTR
A	XXXXXXXX		XXXXXXXX	XXXXXXXX
B		XXXXXXXX		
C		XXXXXXXX	XXXXXXXX	Complete 9/08

6.7. Outer Island Utilities and Alternative Energy

- **Incorporate RMI Alternative Energy activities under MEC.**
  - Aggressive utilization of alternate energy source is critical to RMI, especially on the outer islands. MEC has the expertise and experience to effectively administer and maintain these systems.
  - These alternate sources should be a separate cost center and should be self sufficient, or appropriately subsidized by RMI.

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
FY2007		XXXXXXXX	XXXXXXXX	XXXXXXXX
FY2008	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
FY2009	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX
Fy2010	XXXXXXXX	XXXXXXXX	XXXXXXXX	XXXXXXXX

7. MARSHALLS ENERGY COMPANY BACKGROUND

7.1. General Information about Marshalls Energy Co.

The Marshalls Energy Company (MEC) is a stock company owned by the RMI government and governed by a seven member Board of Directors appointed by the President and chaired by the Minister of Public Works. The Board is responsible for hiring a General Manager who is responsible for all management functions of MEC in the manner of any CEO of a private stock company. MEC functions independently of government operations, except electric rates must be approved by RMI government. MEC has responsibility over the Majuro electric system, the diesel fuel tank farm and several outer island electric systems. A major element of MEC operations and revenues is the sale of diesel fuel to area fishing fleets, plus the sale of LPG to the Majuro residential and business market.

MEC was created on February 2, 1984 by an act of the Cabinet of the Republic of the Marshall Islands. MEC is a Stock Company with 100,000 shares authorized with RMI owning 75,000 of the shares and the remaining 25,000 held by MEC.

MEC serves approximately 3,722 customers. Electrical power lines serve over 95% of the population in Majuro. MEC has two power plants. The older plant, Power Plant No. 1, has four units of 3.2 MW each that have been down-rated to 2.5 MW each, and one unit of 3.0 MW, for a total of 13.0 MW. The newer plant, Power Plant No. 2, completed in 1999, has two units of 6.4 MW each, for a total of 12.8 MW producing a total MEC generating capacity of 25.8 MW. Peak load for 2005 was 11.95 MW.

In September 2006, MEC's older plant experienced a fire and two of the four engines were damaged quite severely and one had minor damage. Assessment of restoration of the generating units was underway as this report was being finalized. Due to the fire damage, Power Plant No. 1 capability had been reduced to 5.5 MW resulting in total MEC generation capability of 18.3 MW to serve the approximately 12 MW peak load.

The MEC distribution system consists of three 13.8 kV circuits extending from the power plant located on the western end of the urbanized southeast end of the Majuro Atoll and serving the major business, industrial and governmental areas on the eastern part of Majuro. There is a 22 mile underground, 13.8 kV distribution power line extending from the Airport to the community of Laura on the far Northwestern end of the Majuro Atoll.

In 2005 MEC had annual sales of 59,773,000 kWh and revenues of $10,275,912. In FY2005 MEC generated 82,367,000 kWh; had a peak load of 11.95MW; had an average electrical load of 9.4MW; used 5,636,666 gallons of No. 2 diesel fuel; spent $8,927,523 for fuel for an average price of fuel of $1.58 per gallon.

With subsidy profits of $1.8 million in FY2005 from the sale of diesel fuel to fishing fleets plus LPG sales, MEC's average price of electricity to the customer was $0.172 per kWh which was significantly less than $0.28 to $0.31 per kWh in nearby island utilities.

Engine efficiency at the plant in FY2005 was 14.6 kWh per gallon of fuel burned and represented a fuel cost of $.108 per kWh. With engine efficiency of 14.6 kWh per gallon, the MEC generators have an efficiency of 36.6%. MEC's station service energy use in FY2005 was 6.9% which is higher than normal diesel power plant station service loads of 3% to 5%.

MEC distribution system losses are approximately 17% to 22% which is higher than normal distribution system losses of 8% to 10%.

7.2. Construction of MEC's Initial Electric System

In early 1980's International Power Systems and Engineering Company, Ltd.(IPSECO)[1] from the United Kingdom entered into a "turn-key" type of contract with the Republic of the Marshall Islands to design, construct and operate the MEC Power Plant 1 and the associated fuel storage facility. The power plant now known as Plant #1, was constructed consisting of four low speed Pielstick British Crossley diesel engines, each rated at 3.2 kW for a total generating capability of 12.8 kW. The engines initially utilized No.5 "bunker" fuel as the energy source. Bunker fuel was a common fuel used by the ocean transport ships of that time. No.5 bunker fuel has since been replaced with No.2 diesel fuel as the predominant fuel in the Pacific region, thus MEC had to switch to the higher cost and less energy intense No. 2 diesel fuel due to lack of supply. The coolant for the engines was from the lagoon side sea water. The generating units were of an excellent

[1] Report by the World Bank, 1992, www-wds.worldbank.org/.../WDSP/IB/1999/09/17/000009265_3961001182903/Rendered/INDEX/multi_page.txt - 182k -

design, operated at a speed of 450 revolutions per minute which was more beneficial for lower cost maintenance than often used higher speed engines. Initial efficiencies of the plant were 14.5 kWh/ U.S. gallon of diesel fuel. The generators provided electrical power at a voltage of 4,160 volts. Later the voltage was stepped up via a step-up transformer to 13,800 volts to more efficiently serve as the distribution voltage to the island.

Concurrent with the construction of Power Plant #1, was the construction of the eight (8) - 750,000 gallon fuel tanks providing for a total storage capacity of 6,000,000 gallons. There were also improvements made to the electrical distribution system at the same time although there is not a clear record or recollection of those improvements.

The cost of the power plant and the fuel tank storage facility was $25,000,000. The financing of the system improvements was by British banks to IPSECO who was contracted to manage and operate the power plant. The plan was to repay the loans from sales of fuel and electricity. Revenues from fuel sales and electric service were less than the business plan anticipated and IPSECO turned the operation of the electric system and fuel terminal over to MEC in the early 1980's. IPSECO eventually went bankrupt in 1986. The Republic of the Marshall Islands through the creation of MEC assumed operation of the electric system and it is understood also assumed the debt of the system.

7.3. Creation of MEC

As a result of the of IPSECO financial difficulties, RMI created the Marshalls Energy Company (MEC) in February 1984. MEC was created as a wholly owned stock entity of the RMI. A seven member board was created to govern MEC and appropriate Articles of Incorporation and By-Laws were developed and adopted.

7.4. Management of MEC

The present General Manager of MEC , Mr. Billy Roberts, was hired by the Republic of the Marshall Island's first President, Amata Kabua, to manage the newly created electric utility and fuel storage facilities beginning in approximately 1986. At the time that MEC was created it has been reported by present MEC staff that the physical assets of the IPSECO power plant and fuel tanks were transferred to the responsibility of MEC. The fuel tanks were leased to MEC for a token fee but the ownership of the tanks remained with the RMI. The power plant 1 assets were transferred to MEC but the present MEC staff believes that the financial assets were not placed on MEC's financial balance sheet.

8. FUEL ISSUES

8.1. Fuel Supply Negotiation Issues 2004 - 2006

Mobil Oil of Micronesia, Inc. (MOMI - a subsidiary of ExxonMobil) had for more than thirteen years been the supplier of fuel to MEC. An arrangement existed such that Mobil filled the fuel tanks at an agreed upon per barrel price which included transport and markup, and MEC made payments monthly based on usage. This "consignment" process was favorable for MEC since they did not have to provide the funds for their fuel inventory. This also allowed MEC to sell to the area fishing fleets prior to having to pay for the cost of the fuel supply. It was also a good arrangement for Mobil Oil in that they could utilize the tanks for local storage to serve several of their regional retail fuel sales depots.

In early 2004, in preparation for negotiations for a new fuel contract, Mobil Oil advised MEC that it would not be able to provide fuel on a consignment basis in the new contract. This decision would require MEC to pay for the fuel in advance of receipt. Mobil Oil related to the Consultant that their reasons for the change in practice was the sharply escalating global price of fuel and thus the cost to maintain the asset value of the fuel in the MEC tanks. They also noted that the general practice throughout the Pacific area of fuel oil suppliers discontinuing the practice of furnishing fuel on a consignment basis.

This action on Mobil Oil's part led to twelve months of rigorous negotiations. MEC and Mobil Oil were not able to agree on the terms and conditions of the new contract, mostly because of what MEC perceived to be an excessive mark up. Previous contract mark up was approximately $5 per bbl above Singapore wholesale plus transportation costs. The proposed mark up for the new contract was approximately $12 per bbl. The previous contract had been negotiated in approximately 2001 when fuel prices were in the range of $25 to $30 per bbl. Fuel prices in 2004-2005 were in the range of $45 to $50 per bbl. This impasse in negotiations ultimately culminated in MEC changing fuel suppliers to SK Networks, a South Korea based company.

In addition to impacting MEC's electric operations, the extended period without a firm supplier interrupted MEC's practice of selling fuel to fishing vessels. Mobil Oil had continued to serve MEC from mid 2004 to the spring of 2005 with fuel on a consignment basis although the contract had expired. Mobil discontinued furnishing fuel on a consignment basis after delivering a final 4 million gallon load of fuel in April 2005 although the finality of that decision was not recognized by MEC staff until July 2005. In July 2005 MEC halted fuel sales to fishing boats to conserve fuel for power generation. This action caused MEC significant loss of revenue and profits. It was much needed revenue that had previously served to offset operational costs for MEC. Thereafter, MEC's volumes of diesel fuel available for sale was much reduced because of MEC's limited financial recourses to purchase fuel. Since MEC did not have the funds to purchase the full load of fuel, some fuel sales to local fishing fleets were made available

at greatly discounted prices in exchange for the fishing fleet's forward purchasing the fuel.

In September 2005 Mobil delivered its final fuel load to MEC and requested payment of $9.6 million for the approximately 4,000,000 gallons of fuel. Since MEC had no financial reserves to make this payment they sought extended payment terms from Mobil Oil. The price of the fuel load was negotiated to $7.8 million with the waiving of import tax and other issues and Mobil Oil entered into essentially an extended payment plan at an interest rate of 1.5% per month over an approximately 30 month plan.

Thereafter MEC entered into a one year fuel supply contract with SK Networks of South Korea. MEC obtained a $2 million, three year, 10% loan from Bank of Guam plus a $3 million, 10% interest rate line of credit to finance subsequent fuel purchases. RMI also forward paid MEC for certain utility services to assist MEC in funding the fuel purchase throughout 2006. Since MEC was unable to provide financing for large volumes of fuel during much FY2006 sales of fuel to fishing fleets substantially declined resulting in limited profits to subsidize the cost of energy to electric customers.

8.2. Value of Fuel Sales to MEC and RMI

Fuel sales are a major source of revenue for MEC and ultimately for RMI, with between $1.5 million and $3.00 million net annual proceeds being used by MEC for electric rate subsidies in the past several years. Maintaining control of, or at least benefiting from these sales is a critical component for the long-term value of the customers and citizens. *The MEC tank farm is an extremely valuable and strategic asset for the Marshall Islands. There is not another fuel supply depot of MEC's size and capability for over 1,000 miles of the Marshall Islands resulting in Marshall Islands being geographically in an excellent strategic location.*

MEC has a history of being able to inventory about a million two hundred fifty thousand (1,250,000) gallons a month of fuel through the tanks with about 800,000 gallons per month being sold beyond their own needs for generation. If this historical number can be reachieved through the appropriate financing of inventory and resumption of sales to the fishing fleet, significant revenues can be realized.

8.2.1. Assumptions

- Monetary Unit is the US Dollar
- Gross Receipts Tax (GRT) of 3% on fuel sold
- MEC usage not subject to GRT
- Import Fees of 8 cents per gallon ($.08)

- Average Fuel Imported (US Gallons) per month of 1,250,000 (15.0 million gal annually)
- Average MEC Usage per month (US Gallons) of 450,000
- Average external fuel sales per month of 800,000 gallons
- Average landed cost per gallon of fuel is $2.00
- Average MOCR (maintenance, operations and capital replacement) is $.05 per gallon
- Average profit is approximately $.26 per gallon (15% per gallon less MOCR)
- Average sales price per gallon is approximately $2.45 including GRT and Import Tax

8.2.2. RMI Revenue

- Import Fees on 17.4 million gallons: $.08/gal x 15,000,000 gal = $1,200,000/yr.
- GRT on 800,000 gallon/mo.: 3% x 9,600,000 gal per year x $2.45 = $705,600/yr.
- Total RMI revenue from sales = $1,905,600/yr.

8.2.3. MEC Revenue

- Net profit: $0.26 per gallon x 9,600,000 gallons per year = $2,496,000 annually
- MOCR: $.05 per gallon x 9,60,000 gallons per year = $480,000 annually

8.2.4. Discussion

There is much uncertainty regarding private fuel supplies in the Marshalls at the current time. Mobil Oil has expressed a desire to depart from the market, while SKN is seeking to expand into it. Many of the fishing vessels, especially the high volume users such as the purse-seiners are reportedly refueling on the high seas and avoiding resellers altogether. It has been reported that the number of bunkering vessels in the region has increased from three to five only five years ago to as many as ten by the end of 2006.

In any case, the interruption of MEC's traditional sales to fishing vessels beginning in July 2005 & continuing into 2006 has caused unease in the industry with alternatives being aggressively explored. Conversely, there are parties that are convinced that fuel

sales cannot only be recaptured, but dramatically increased. If this were possible, even more dollars would flow to and or through MEC.

Because of the strategic nature of the tank farm, and the significant dollars of potential taxes and earnings they represent, fuel is a major determinant of any future decisions associated with joint ventures or stock sales.

8.3. Market for Fuel Sales to Fishing Fleets

MEC has been providing diesel fuel service to the local and regional fishing fleets since the fuel tanks came into MEC's possession. There are approximately 40 to 60 longliner fishing boats and upwards of six purse seiners that operate out of the Majuro ports. These vessels plus transshipping vessels provide a reasonably sized and very valuable customer base for the bulk fuel station that MEC operates. As the Majuro loining plant is rebuilt and comes back into operation, the transshipping vessels and local fishing boats arriving at the Majuro fuel port is destined to increase. In order to recognize the extent of the Majuro based fishing fleet and transshipment market, a report produced by the Forum Fishing Association in their DevFish Trip Report #3 of June 2006 is cited here. The report had the following documentation regarding fishing fleet activity in the Majuro area:

"*Marshall Islands has also established itself as an important transshipment base for purse seiners, particularly for the Taiwanese fleet. In 2004, 227 transshipments accounting for more than 163,000 tonnes of tuna were made in Majuro. Of this amount, more than 46,000 tonnes was caught by the six Marshall Islands flag vessels of the Koos fishing company. Locally based longline fishing activity centers on the Majuro Fish Base, which is leased to Marshall Islands Fishing Venture (MIFV) – a Luen Thai company. Around 40 vessels, mainly Chinese, operate out of the base and account for much of the longline catch in the Marshall islands' waters, as well as offloading fish caught elsewhere. Landing in 2004 were over 3,000 tonnes."*

8.4. Fuel Pricing Issues at the MEC Majuro Fuel Depot

The DevFish report and other sources have cited the high cost of fuel as a limiting factor in the development of the tuna industry in the region. A major complaint leveled against MEC has been their pricing of diesel fuel. Reports are that fishing fleet operators complain that MEC's high fuel costs have been pricing their fleets out of the competitive fishing market. However, the DevFish report included a paragraph about regional fuel prices and the following paragraph from that report indicates that MEC's fuel prices have actually been quite competitive with other regional suppliers:

"*<u>Fuel.</u> Continuing increases in world fuel prices have obviously impacted on fishing operations in all three (RMI, FSM and Palau), but there are also differences in local pricing. The cheapest fuel in the Micronesian region is available in Guam, where a fishing vessel can buy diesel for USS $2.41 per US gallon ($0.66 per litre). In Palau the price is $2.90, in Pohnpei $3.26 and in Majuro $3.50 from the commercial supplier. In the latter case, the Marshall Islands Electricity Co. (a Government owned utility company with large fuel storage facilities) has been providing fuel to licensed fishing vessels at the more competitive rate of $2.58 per US gallon, but has recently had difficulty in maintaining sufficient stock."*

From this report it is noted that MEC has actually been providing fuel at prices well below the regional commercial supplier on Majuro and Pohnpei. That regional commercial supplier noted in the DevFish report is apparently Mobil Oil of Micronesia, Inc. MEC was nearly matching the price of Guam, only 7% higher, and was 12.4% lower than the commercial supplier in Palau. The commercial supplier of fuel in Palau is Shell Oil Corp. Therefore from this report and from other inquiries into fuel costs in the Pacific region, it can be concluded that MEC has been providing fuel at prices that are well within a reasonable competitive range. MEC has done so and still have been able to provide a comfortable profit margin that has been used very beneficially to hold down the cost of electricity to MEC's Majuro, Jaluit and Wotje electric customers.

8.5. LPG service

MEC provides Liquid Petroleum Gas service in Majuro. Fuel skids of LPG are imported regularly and used to refill LPG containers furnished by MEC. An estimated $430,000 of LPG is sold annually. The estimated cost of sales is $215,000. The margin is utilized to subsidize electric rates. Any change in ownership or operation of the main MEC fuel tanks should take into consideration the effects of such transition on the LPG service. The LPG service is a well run operation providing a valuable and reasonably priced service and it should be retained. The LPG service could be conducted by other elements of RMI public works if necessary since the purchase, delivery and marketing of LPG can be a separate function from diesel fuel operations or electric system operations.

8.6. Fuel Price Effect on Electric Rates

In January of 1999 crude oil prices fell below US$10.00 per barrel. Just twelve months later the price had risen to $24.00, and then remained below $30.00 for the next several years. In mid 2004 the price of crude oil began to rise quickly, with prices more than doubling to a peak of almost $70.00 in 2006, a seven fold increase in just seven years.

This unprecedented run up in fuel prices impacted the electric utility industry dramatically, particularly those generators who were not historically passing along fuel increases to the electric customers on a monthly basis as the price increased. As the cost

of the fuel to run generators skyrocketed, the delivered cost of energy also rose – in many cases beyond the price being charged the customer.

This was particularly the case with the Marshalls Energy Company. MEC utilizes a "flat rate" without a facilities charge. This results in a reliance on usage revenues to cover even those costs that exist whether or not such usage does. This would include such expenses as transformer losses, capital costs and organizational fixed costs.

Faced with this unprecedented environment in 2006 the MEC Board recommended, and the cabinet approved a fuel adjustment template that allows MEC to increase its prices in response to fuel cost increases. Unfortunately most of the increases in fuel had already occurred by this time.

9. FINANCIAL ENVIRONMENT OF MEC

9.1. Review of MEC Financial Statements of FY2004-2005

Results of Operations

The Marshalls Energy Company's (MEC's) net assets decreased from $3,958,657 in 2004 to $792,719 in 2005. Additionally, the Net Working Capital deteriorated from a negative $733,061 in 2004 to negative $3,415,830 for 2005. Net Working Capital (current assets less current liabilities) reflects a business' ability to pay current obligations. While cash and cash equivalents remained virtually constant at September 30th for both years, MEC deferred payments on its accounts payable allowing them to increase by over $2.1 million in 2005. According to the last sentence on page 3 of the MD&A: "Current liabilities increased by 49% or $2,144,192 primarily due to the loss of cash flow discussed earlier relating to uncertain fuel supplies.

To better analyze the results of operations, in Table 1 listed below, the utility system (electric) revenues and expenses from those associated with fuel and gas sales were separated into Electric Operations and Fuel and Gas Sales Operations.

Table 1:

Utility (Electric) Operations		
	2005	2004
Operating Revenue	9,712,058	8,619,539
Less: Cost of Power	(11,178,752)	(7,907,035)
Contribution Margin (1)	(1,466,694)	712,504
Less: Operating Expenses	(3,941,122)	(3,941,454)
Operating Loss	(5,407,816)	(3,228,950)

Non Utility (Fuel and Gas Sales) Operations		
	2005	2004
Fuel and Gas Sales	13,882,183	11,314,817
Less: Cost of Sales	(11,231,959)	(9,168,423)
Contribution Margin (2)	2,650,224	2,146,394
Less: Operating Expenses	(632,283)	(487,403)
Operating Income	2,017,941	1,658,991

It is noted that revenues associated with utility operations are lower than the net cost of purchased power for 2005 (1). As the cost of power has gone up, the operating rates have not been adequately increased which allowed power to be sold for 15% less than the purchase price paid by MEC. Additionally, utility related operating expenses equaled 40% of revenues. Total outflows were 155% of total revenues for 2005. In contrast, the fuel and gas contribution margin (2) is constant for both years at 19% of revenues. While this has been adequate to cover the associated fuel and gas operating expenses and produce a profit, the profit is insufficient to cover the utility loss.

While actions to reduce utility operating costs would be beneficial, until a) the rates per unit are substantially increased, and b) the cost of power per unit is substantially reduced, the contribution margin will remain insufficient to cover any operating expenses.

When combined, the utility (electric) losses exceed non-utility (fuel and gas) income resulting in an overall loss of $3.5 million for 2005. In order for the fuel and gas operating income to have covered the losses generated by the utility operations, the mark-up would have to have been set at 54% of cost instead of the 19% reflected for 2005. Respectively, sales volume would have to increase 130% (more than double) in order for the 19% mark-up to produce sufficient revenue to cover combined costs.

2005 Fuel and Gas Sales		
	@ 54% Mark-Up	@ 130% Increase in Sales Volume
Sales	17,297,217	31,898,764
Less: Cost of Sales	(11,231,959)	(25,837,999)
Contribution Margin	6,065,258	6,060,765
Less: Operating Expenses	(632,283)	(632,283)
Net Operating Income	5,432,975	5,428,482

Maintaining MEC as a going concern will require increases in electric rates, cost saving measures in the electric utility as well as possible increases in the volume of fuel.

Capital Investment

With $11.5 million of net investment in the utility plant and annual depreciation of approximately $1.13 million, plant assets have an estimated 10 years of useful life remaining (2015). At September 30, 2005, payments on the debt associated with the capital investment in the utility plant run 12 years through 2017. As debt extends beyond the assets useful life, total net assets equal $792,719 or $1.3 million less than the $2.1 million investment in capital assets, net of the related debt as reflected on page 8 of the annual audit (Net Assets).

Not only does the existing debt structure exceed the assets useful life, no provision is in place to reserve or "set aside" funding for future investment in capital assets. Consideration must be given to creating an annual allocation to a reserve for future capital investment and incorporating such in the supporting rate structure. Refinancing existing debt at lower interest rates should also be investigated.

Other Areas of Concern

Working Capital

- Inadequate working capital resulting in non-payment of current liabilities
- "Snowball effect" of borrowing cash for working capital without addressing necessary changes in rates
- High interest rates associated with borrowing for working capital cash flow

Rates

- History of rates that under-recover costs
- History of maintaining artificially low rates (bottom of pg 5, "…among the lowest in the Pacific")

Cash and Cash Equivalents

- Deposits are maintained in one financial institution subject to FDIC insurance. MEC does not require collateralization of its cash deposits; levels in excess of

FDIC coverage ($100,000) are uncollateralized and subject to custodial credit risk.

Coverage Ratio Requirements

- MEC was not in compliance for either year with coverage ratio requirements associated with the mortgage rates unconditionally guaranteed by RepMar and collateralized by a leasehold mortgage and security agreement over assets of MEC.

Unrestricted Net Assets

- $1.3 million negative unrestricted net assets reflects debt in excess of the associated capital investment

The value of 100,000 shares of $1 par value common stock is carried in unrestricted net assets, which currently reflects a negative $1.3 million value

9.2. MEC - a Stock Company

MEC was created on February 2, 1984 by an act of the Cabinet of the Republic of the Marshall Islands. MEC's is a Stock Company and 100,000 shares have been authorized with RMI owning 75,000 of the shares and the remaining 25,000 held by MEC. When IPSECO withdrew from operations in Majuro due to financial difficulties, RMI reportedly assumed the $25,000,000 debt. MEC staff indicated that U.S. Compact I energy grant funds of $1.87 million per year aided in retiring the loan in FY2001. MEC staff also reported they understood that MEC had to absorb an IPSECO debt of approximately $1 million owed Shell Oil for previous fuel deliveries to IPSECO. Shell Oil was the fuel supplier at that time.

9.3. MEC's Electric System Assets Inherited from RMI

MEC inherited the 12 mw Power Plant #1, the fuel tanks and terminal, the electric distribution system, system inventory and vehicles from the RMI government when MEC was created.

In November 1993 MEC was granted the right to operate the electric system on the Jaluit Atoll. The term of the lease is for 50 years commencing on December 1, 1996. On October 20, 2000 RMI contracted with MEC to operate and maintain the electric power generation systems on the Wotje Atoll.

9.4. Fuel Tank Lease, Majuro Electric Franchise

The physical facilities of the electric system and the 6 million gallon fuel storage facility were leased to MEC by the RMI government. Therefore the facilities are under MEC's control but the financial assets of the system were not placed in MEC's financial

statements. A 50 year lease of the facilities and an accompanying exclusive franchise to serve in Majuro Atoll was entered into on December 1, 1996.

9.5. Federal Financing Bank Loan for Power Plant No. 2[2]

On November 18, 1997, MEC entered into a loan agreement with the Federal Financing Bank (FFB) in the amount of $12.5 million for the construction of a new power plant, with loan repayments guaranteed by the Rural Utilities Services (RUS). MEC drew down the funds at different times at interest rates based at the date of the draw down and range from 5.49% to 7.25% per annum. Principal and interest are payable in quarterly installments of $273,770 through January 2, 2018. The mortgage notes have been unconditionally guaranteed by the RMI Government, under which RMI will make debt service payments to RUS in the event of default of MEC, and have been collateralized by a leasehold mortgage and security agreement over the assets of MEC. These notes are subject to certain coverage ratio requirements.
Section 5.4 of the RUS loan contract requires MEC to set rates to provide revenues sufficient to meet average coverage ratio requirements as follows:

Times Interest Earned Ratio (TIER)	= 1.5
Debt Service Coverage (DSC)	= 1.25
Operating Times Interest Earned Ratio (OTIER)	= 1.1
Operating Debt Service Coverage Ratio (ODSCR)	= 1.1

MEC has not been in compliance with these ratio requirements.

As of the end of FY2005, MEC's long term debt of the FFB loans was $8,903,917.
Notes payable are:

Federal Financial Bank Loan Payment Schedule

[2] 2005 Financial Audit by Delotte, Touche

For Each Year Ending Sept. 30,

Year	Principal Balance	Interest Due	Total Annual Pmnt
2006	511,970	583,124	1,095,094
2007	550,388	559,987	1,110,375
2008	724,230	629,359	1,353,589
2009	628,047	467,046	1,095,093
2010	668,314	426,784	1,095,098
2011-2015	4,048,177	1,427,299	5,475,476
2016-2018	2,284,761	184,513	2,469,274
Totals	9,415,887	4278,112	13,693,999

9.6. Electric Rates

The electric rate tariffs had remained unchanged at MEC for many years at a rate that averaged near $.143 per kWh. In January 2004 MEC staff proposed an increase in electric rate tariffs to reflect the rising cost of fuel. Fuel prices had remained relatively stable from 1986 to 2000, hovering between $10 to $20 per barrel, with a short spike to $30 per barrel during 2000-2001 before retreating to below $20 per barrel briefly in 2002. From 2002 onward fuel prices increased sharply to over $70 per barrel by 2005 and then retreated into a range of $60 per barrel. Several Pacific Island utilities had adopted Fuel Adjustment Clauses in 2000 and 2001 that allowed the utility to automatically adjust the electric rate tariff monthly based on the cost of diesel fuel being used at their power plants. In early 2004 the MEC staff proposed a rate tariff increase of approximately two (2) cents per kWh. However, the Board did not approve the rate increase until November 2004 and the Cabinet approved the rate for application on the December 2005 billings. The effects of the rate increase were realized in January 2005 when average per kWh revenue increased to 16.2 cents per kWh from the 14.3 cents per kWh, a rate that had been in effect since 2001.

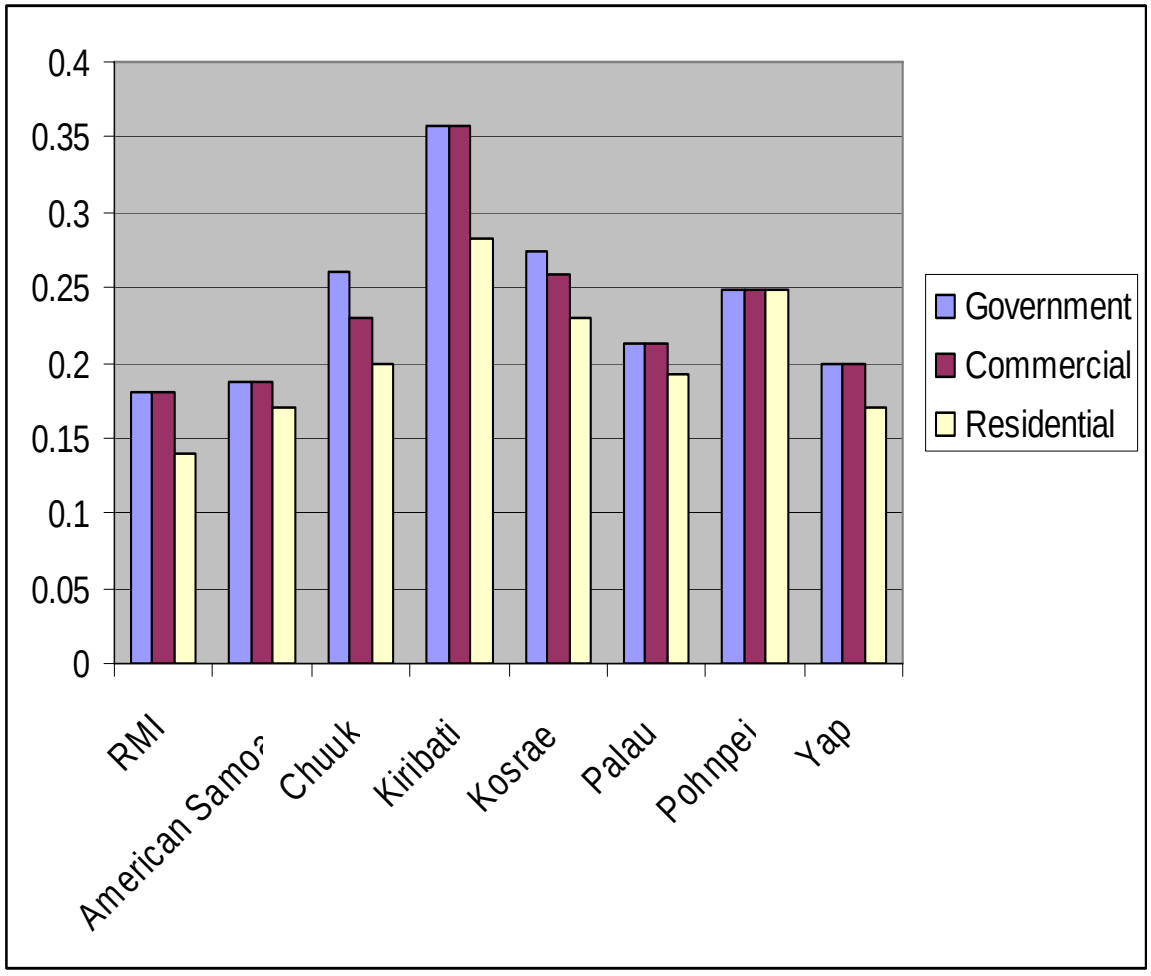
In July 2005 MEC General Manger recommended a rate template that tracked the landed cost of diesel fuel. The MEC Board approved and forwarded the new tariff template to the Cabinet in July 2005 and the Cabinet approved the new tariff template with the increased rates in September 2005. However, MEC had suffered substantial additional cost before the new rate tariff took effect, causing part of the FY2005 operating losses. The new rate template that allowed the staff to change the rate depending upon the landed cost of fuel and the rates increased to an average of 18.0 cents per kWh for September and October 2005; to 20.0 cents per kWh for November 2005 through June 2006 when it increased again to 22.0 cents per kWh. In December 2006 the staff proposed, and the Board and Cabinet approved a new rate tariff template that

increased the rates on commercial and governmental by 5.5 cents per kWh. The residential and life-line rates remained the same. See Tables below.

Prior to the December tariff increase Commercial customers represent 9% of MEC's customers; 37% of the kWh energy sales; and 41% of the revenue. Government customers represented 3% of the customers; 20% of the kWh energy sales; and 18% of the revenue. Residential customers represented 41% of the customers; 37% if the kWh energy sales; and 32% of the revenue. Life-line customers represented 46% of the customers; 8% of the kWh energy sales; and 7% of the revenue.

RMI has been the lowest cost electric supplier in the region. Pohnpei and Kosrae represent utilities that purchase fuel from the spot market and generally have rates that recover most costs, although perhaps not all depreciation costs. Their rates, as of July 2005 were generally in the range of 25 cents per kWh whereas RMI rates were in the range of 16 cents per kWh during the same period of time. As of the time just prior to July 2005, RMI was still enjoying subsidies from the sale of fuel to the fishing fleets of $2,000,000 per year that offset approximately 3.3 cents per kWh for the RMI customers.

Comparison of Electric Tariffs (US$ per kWh) - July 2005



COMPARISON OF REGIONAL TARIFFS

				7/26/05
Power Authority	**Government $/KWh**	**Commercial $/KWh**	**Residential $/KWh**	**Life Line $/KWh**
RMI	0.180	0.180	0.140	0.130
American Samoa	0.187	0.187	0.170	-
Chuuk	0.260	0.230	0.200	
Kiribati	-	0.358	0.282	-
Kosrae	0.274	0.259	0.230	
Palau	0.212	0.212	0.192	0.172
Pohnpei	-	0.248	0.248	-
Solomon Islands	-	0.237	0.200	-
Yap	0.200	0.200	0.170	0.150

NOTE: The above rates are inclusive of any applicable Fuel Surcharges

MEC electric rate tariff template in effect during FY2006 was as follows:

	Diesel Price per barrel $	**Commercial & Government**	**Residential**	**Life Line**
	25.00	0.160	0.120	0.120
	35.00	0.170	0.130	0.130
Increase at 1 Jan 05	**50.00**	**0.180**	**0.140**	**0.130**
	55.00	0.190	0.150	0.140
Increase at 1 Sep 05	60.00	**0.205**	**0.150**	**0.140**
	65.00	0.215	0.160	0.150
Increase at 1 Nov 05	70.00	0.225	0.170	0.160
	75.00	0.235	0.180	0.170
Increase at 1 Jul 06	80.00	0.245	0.190	0.180
Increase at 1 Sep 06	85.00	0.255	0.200	0.190
	90.00	0.265	0.210	0.200

As of Mid December 2006 the RMI Cabinet approved the following electric rate tariff template for MEC's electric rates:

		Diesel Price per barrel $	Commercial & Government	Residential	Life Line
		25.00	0.22	0.120	0.120
		35.00	0.23	0.130	0.130
	Increase at 1 Jan 05	**50.00**	**0.24**	**0.140**	**0.130**
		55.00	0.25	0.150	0.140
	Increase at 1 Sep 05	60.00	**0.26**	**0.150**	**0.140**
		65.00	0.27	0.160	0.150
	Increase at 1 Nov 05	70.00	0.28	0.170	0.160
		75.00	0.29	0.180	0.170
	Increase at 1 Jul 06	80.00	0.30	0.190	0.180
	Increase at 1 Sep 06	85.00	0.31	0.200	0.190
		90.00	0.32	0.210	0.200
Existing Template – as of Nov.06		**79.00**	**0.255**	**0.255**	**0.200**
Revised Tariffs - as of Dec.06		**70.00**	**0.28**	**0.27**	**0.21**

MEC customer mix (See Exhibit 13.5) indicates that a substantial amount (59%) of the revenue is derived from the commercial and residential sectors. Commercial customers by number represent 9% of the customer base; government customers 3%; residential customers 42% and life-line customers (those using less than 500kWh per month) 46%. Energy usage is distributed with commercial customers using 36% of the kWhs; government 20%; residential 36% and life-line 8%. The revenue breakdown between the customer classes are; commercial 42%; government 18%; residential 32% and life-line 7%. These were the breakdown of the information for FY2005 but since then different rate tariffs have become effective and the breakdown will be different, especially the revenue breakdown. With the new rate tariff that went into effect in December 2005 wherein the rate for the commercial and governmental customers increased by five (5) cents per kWh and the residential and life-line rates were not changed, will place much more of the revenue receipts into the commercial and government customer class.

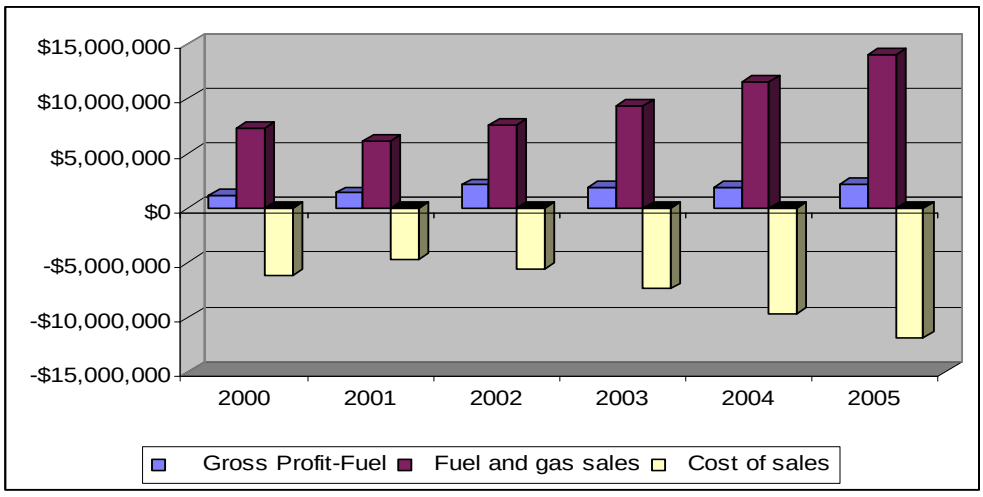
9.7. Profits From the Sale of Diesel Fuel

MEC had been selling an average of 800,000 to 1,000,000 gallons of diesel fuel per month to the fishing fleets in recent years. Profits from the sale of diesel fuel were $1.85 million in FY2004 and $2.2 million in FY2005. The profits were used to subsidize the MEC electric customers. The subsidies represented approximately 3.3 cents per kWh for the MEC electric customers on electric rates that were on average approximately 15 to 16 cents per kWh. Thus the subsidies from fuel sales profits kept the electric rates approximately 20% below what they would have had to be to maintain a similar annual financial outcome.

In early 2004 Mobil Oil advised MEC that they would no longer furnish fuel on a consignment basis. This decision by Mobil would lead to MEC being required to fund the normal $8,000,000 loads of fuel arriving at the MEC fuel tanks on a quarterly basis. MEC nor RMI had $8,000,000 of reserve funding to be able to finance the fuel inventory. MEC attempted to negotiate with Mobil but after a full 15 months and Mobil continuing to furnish four more quarterly loads of fuel on the consignment basis, negotiations broke down. Without funding for a large fuel inventory, MEC had to discontinue selling fuel to the fishing fleets in July 2005 in order to preserve the remaining fuel volumes for use in the MEC generators. Fuel sales to fishing fleets since July 2005 have been averaging less than 300,000 gallons per month. During 2006 only small profits were realized from the sale of fuel. In an effort to bring reasonable quantities of fuel shipments into Majuro in 2006 MEC sought assistance from the fishing fleets in purchasing fuel at only slightly over the landed price due to MEC lack of funding.

MEC Fuel Sales Operations

	2000	2001	2002	2003	2004	2005
Gross Profit-Fuel	$1,190,734	$1,398,466	$2,130,389	$1,957,727	$1,850,141	$2,198,091
Fuel and gas sales	$7,323,031	$6,122,021	$7,660,469	$9,341,838	$11,505,967	$14,062,333
Cost of sales	($6,132,297)	($4,723,555)	($5,530,080)	($7,384,111)	($9,655,826)	($11,864,242)

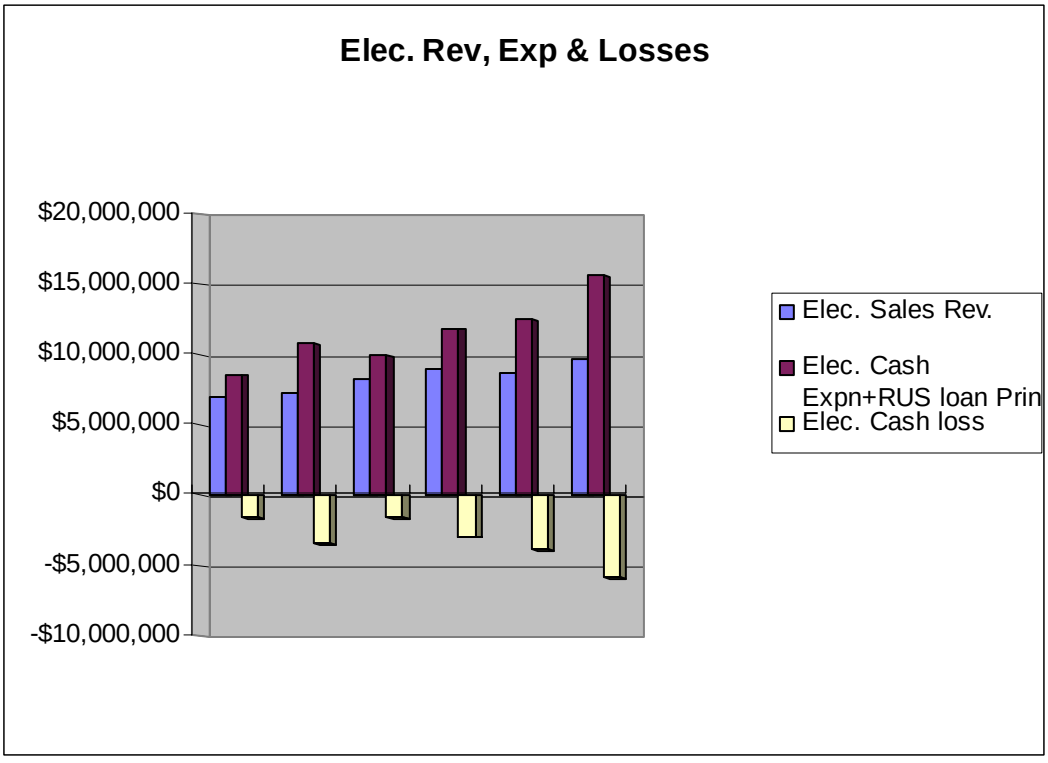


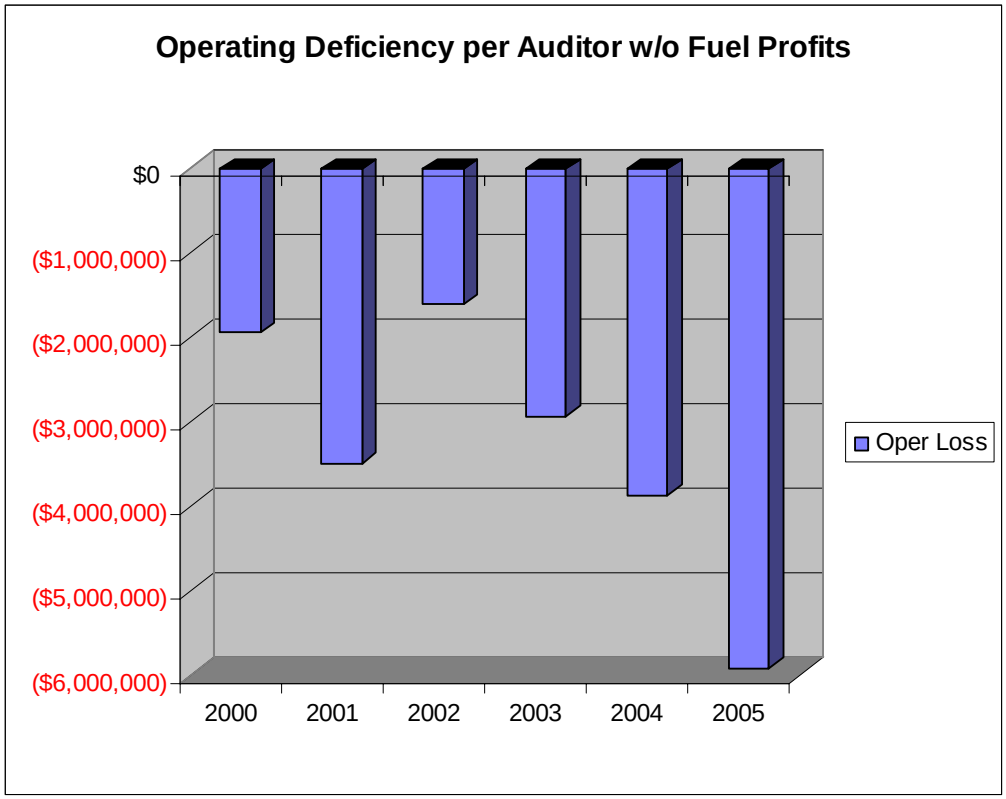
9.8. Electric System Profits and Losses

MEC electric system, without adding in profits from fuel sales and contribution in 2002 and 2003 from Compact I funding, has operated at a loss for all six years previous to FY2006. In FY 2005 the Electric system had financial losses $5.8 million. In FY2006 the financial losses are estimated to be approximately $6 to $6.2 million. In FY2000 the net worth of MEC was over $4 million. As of the end of FY2005 the net worth was $793,000. At the end of FY2006 the net worth of MEC will be nearing a negative $5 million.

Electric Operations Revenue, Expenses & Losses for FY2000 through FY2005.

	2000	2001	2002	2003	2004	2005
Electric Revenues	$6,986,742	$7,237,341	$8,289,970	$8,872,780	$8,619,539	$9,712,058
Electric Cash Expense	$8,577,741	$10,724,006	$9,900,645	$11,810,131	$12,485,006	$15,625,989
Electric Net	($1,590,999)	($3,486,665)	($1,610,675)	($2,937,351)	($3,865,467)	($5,913,931)





9.9. Depreciation

A major concern that occurred at the time of creation of MEC was not placing the financial assets of the electric system into the MEC financial statements. Without the assets being shown in the MEC financial statements, MEC apparently did not charge any depreciation expense against earnings in the MEC income statement. Thus MEC did not set their electric rate tariffs high enough to cover the depreciation expense and thus failed to collect funds to replace the Power Plant No. 1, the fuel tanks and the electric distribution system. These capital assets have been deteriorating and depreciating since MEC took charge of the physical assets of the electric system in 1984 but there are no reserve funds set aside now to replace the depreciated assets.

MEC also has not set up any type of Fund for Renewables and Replacements that many utilities establish to fund their capital projects and replacement of facilities. Often the cash that is generated by establishing electric rates sufficient to cover the cost of depreciation is placed in the Renewables and Replacement Fund. However, in recent years MEC has not had a profit that would allow them to place money in such a fund.

9.10. Loans

MEC has four major loans, three are relatively short term loans and the fourth is the long term FFB loan secured in 1997 to construct Power Plant Number One. The details of the FFB loan is discussed above. As of the end of FY2005 the outstanding balance was approximately $8.9 million with payments of approximately $270,000 per quarter, with interest and principal being nearly equal at about $540,000 per year although it varies fro year to year. There are twelve years remaining on the term of the loan with payments being completed in 2018.

When Mobil Oil discontinued providing the funding for MEC's fuel inventory in July 2005, MEC secured one final 3.86 million gallon load of fuel from Mobil which was delivered in September 2005. MEC nor RMI had the financial resources to pay the $7.8 million invoice and RMI and MEC entered an invoice payment plan with Mobil Oil with interest set at 1.5% per month. After partial payment of the loan was made out of proceeds of loans from a Bank of Guam, a principal amount of $5.9million loan agreement was entered into in early 2006. The terms of the loan was 1.5% per month, to be repaid in 24 monthly payments, with the first six payments to be $200,000 per month beginning in April 2006 and increasing to $320,000 per month in October 2006 with final payoff being April 2008.

In January 2006 MEC and RMI secured a $2,000,000, 36 month loan from Bank of Guam. The loan had a 10% interest rate. Payments of approximately $64,000 per month began in March 2006 with final payment of the loan expected for February 2008.

MEC also obtained a $3,000,000 Line of Credit from the Bank of Guam. The Line of Credit has a 10% interest rate payable monthly. MEC has been utilizing the Line of Credit to purchase fuel supplies for electric power generation.

10. PERFORMANCE AUDIT AND REVIEW - 2001 to 2006

10.1. Performance Audit Methodology

The Performance Audit of the Marshalls Energy Company includes eight separate categories:

1. Operations
2. Human Resources
3. Financial
4. Governance
5. Administration
6. Planning
7. Technical and Construction
8. Public Relations and Marketing

The Consultant developed six to twenty-five questions under each of the eight categories for a total of 101 questions and graded the findings as either:

- Yes or Always
- Usually
- Occasionally
- No or Limited

A grade of 99, 89, 79 and 69 was assigned to each answer respectively and a final grade rating calculated. MEC's performance was graded for each Category with grades of A, B, C or D and variations thereof.

MEC's overall performance **Grade was a B.**

The Consultant thereafter developed a narrative for each of the questions, explaining the findings and discussed the standards that would normally be anticipated for a utility of MEC's size, location and structure.

10.2. MEC Performance has been satisfactory

MEC has performed in a satisfactory manner in each of the various areas considering the size of the utility, the Island environment and the developmental nature of MEC in the Republic of the Marshall Islands. The major strengths of MEC have been the areas that are most important to the customer and the economy. Those areas are reliability and reasonably low cost electricity. As a modern economy develops the dependence on electricity transitions from one of convenience to one of necessity. MEC has served Majuro well in that transition, assuring that the electricity was reliable and it was made available at a reasonably low cost. Because of these factors, solid economic development was greatly enhanced in Majuro since all forms of commerce, industry and governmental functions could depend upon the electricity always being available and at prices that were lower than in neighboring islands.

There were two areas that are of concern. Those two areas were the lack of financial reserves and the relatively high system energy losses. There are other areas that may need attention, however they were not of a serious detrimental nature to the general operation and good service provided by MEC. Most of the other areas needing some attention were administrative functions that should be addressed as MEC goes forward and grows into a more formalized operation in the future rather than the more informal basis as is often the practice in the development of a new utility.

10.3. Performance Assessment Charts

10.3.1. Operations Assessment Operations relates to the day to day operations of the facilities. Questions of performance are whether the facilities are operated and maintained in a manner that assures safe and reliable service to the public and the employees. The questions of Operations include:	NO OR LIMITED	OCCASS IONALY	USUALLY	YES OR ALWAYS
1. Is the system reliable?				
2. Are the engine-generators operated in an efficient manner?				
3. Are supplies ordered correctly and in a timely manner?				
4. Are the facilities staffed appropriately?				
5. Are there safety regulations in place; safety manuals; safety officers; safety inspections; and regular staff safety meetings?				
6. Are there written operating procedures for all operational areas; power plant; distribution system; customer service; fuel tank operations?				
7. Are there daily, weekly, monthly, quarterly and annual operating documentations taken, reported and monitored to assure compliance with operating procedures?				
8. Are outages responded to in a timely manner?				
9. Are there post incident reviews and reports that help identify the problem and set up future actions or maintenance to help reduce the outage incidents?				
10. Are crew sizes appropriate?				
11. Are there construction standards available to all distribution crews to assure the electric distribution system is constructed and maintained in accordance with good operating standards and procedures?				
12. Is the water system efficient?				
13. Is the water being treated effectively and within the environmental laws of the Republic of the Marshall Islands?				
Rankings	0	2	8	3
Operations Average Assessment = 89.8 = B +				
Electric Operations Average Assessment = 91.3 = A - **Water Operations Average Assessment = 79.0 = C +**				

10.3.2. Human Resources Assessment Human resources relates to the personnel that are within the organization to carry out the operations and other functions of the enterprise. Questions of performance are whether the human resources aspect of the organization are properly in place and hired, organized, evaluated and managed appropriately according to the norms of present day personnel management. The questions relating to Human Resource management include:	NO OR LIMITED	OCCASSIONALY	USUALLY	YES OR ALWAYS
1. Are all areas of the organization staffed appropriately?				
2. Are properly qualified persons hired and placed into each position in the organization?				
3. Is hiring and promotion done based on merit and qualifications in an equitable manner and without undue influence due to social class, relationships and other non job performance factors?				
4. Has the structural organization been developed to properly staff the organization and provide a clear supervisory and command structure?				
5. Are there job descriptions of each position?				
6. Are the jobs classified according to skill level required; mental or physical effort required; safety issues; and knowledge levels so that the positions can be ranked and graded for equitable decisions of pay level?				
7. Is there a formal pay scale?				
8. Are there periodic salary surveys to assure that pay levels are within appropriate ranges considering skill levels, local personnel available with similar skills and possibility of losing skilled personnel to off-island employers if salary levels are not adequate?				
9. Is there an employee personnel manual; is it available to all employees; have all employees read it and signed off on their understanding of its contents?				
10. Is there a formalized process for rewarding performance such as a semi or annual performance review?				
11. Is the performance review structured to assure that all employees are graded and ranked equitably for consideration of pay increases, promotional issues or performance improvement programs or actions leading to release from employment?				
12. Is there a formalized process for handling disciplinary				

issues?				
13. Is there a formalized advertising process to assure that all RMI citizens can have the knowledge about the employment opportunity?				
14. Is there an orientation and training program for new employees, rather than just "on-the-job learn as you go" so that new employees can quickly be incorporated into the workforce in a productive manner and be given organizational cultural guidance regarding safety issues, proper behavior, ethics and productive job performance expectations.				
15. Is there a formal training program for all employees, either with training programs developed and presented by supervisors, or training programs brought to the island, or in special cases, off island training for specialized positions?				
Rankings	3	4	7	1
Human Resources Average assessment = 83.0 = B				

10.3.3. Financial Assessment Financial management relates to all issues involved in the sourcing, management, measurement and accounting for the resources, including the physical facilities, financial resources & credit worthiness, of the enterprise. The questions relating to Financial Management include:	**NO OR LIMITED**	**OCCASSIONALY**	**USUALLY**	**YES OR ALWAYS**
1. Does the enterprise operation make sufficient revenues to continue operations?				
2. Are monthly invoices paid in a timely manner?				
3. Are account receivables billed, given reminders and collection procedures initiated when necessary?				
4. Does management seek to enhance the financial condition of the enterprise with profitable sales of product and use profits to keep the electric and water rates to the customers as low as possible?				
5. Are there cash reserves established that can assure the enterprise will be able to financially survive a natural or man made disaster or a				

sudden change in the market or cost of operations?				
6. Is there an audit prepared annually that is free of major qualifying exceptions.				
7. Are internal controls established to monitor and detect improper financial actions of employees or others?				
8. Is there any form of managerial cost accounting system utilized to assist management in making sound financial decisions on capital expenditures or improvements to operations?				
9. Is there an annual budget that is developed in sufficient detail to allow for good monthly managerial monitoring throughout the year?				
10. Are variances in budget expenditures addressed by management in a timely manner to assure cost controls are implemented?				
11. Is the annual budget monitored monthly and appropriate action taken if budget line items are outside of normal variance?				
12. Is there an annual capital budget?				
13. Is there a schedule of the progress of the work included in the capital budget such that purchases of material and expenditure of personnel salaries can be preplanned by financial administrators to assure appropriate cash availability?				
14. Is there either a monthly or quarterly full, but unaudited, financial report prepared and reviewed by management and made available to the Board to assure financial goals are achieved?				
15. Is there a Cash Flow statement developed each month and adjustments made in bank accounts to assure cash solvency of the enterprise.				
16. Are all expenditures and revenues recorded in a recognized, categorized accounting system to assure proper monitoring of the enterprises financial operations?				
17. Is there a good asset accounting system in place and is it kept updated?				
18. Are all accounts payable kept current?				
19. Are all accounts receivable monitored and collection procedures initiated when necessary?				
20. Are charges for services such as fuel sales established to maximize revenues?				
21. Are charges for electric service established to assure payment for the cost of the service?				

22. Are electric rate studies done on a regular basis, perhaps each five years, to assure that the rate structures are equitable and that each customer class is paying their fare share of the costs, or as per established organizational policy if one class is to subsidize another?				
23. Are adjustable electric rates established that automatically adjust to rapidly changing costs, especially fuel costs, such that the enterprise will not suffer catastrophic financial losses in the event governing bodies do not act on a timely manner in allowing electric rates to change when external conditions change rapidly?				
24. Are revenues established to properly provide for a positive income statement, even when depreciation is included as an operating expense?				
25. Is depreciation properly charged against operating income with cash generated from depreciation expense properly used for capital additions or placed in secure reserve accounts for future capital additions when the depreciated assets wear out?				
Rankings	8	6	7	4
Financial Average Assessment = 81.8 = B -				

10.3.4. Governance Assessment Governance relates to the management's working and coordinating with the Policy Governing body of the organization. It relates to the carrying out the duties of providing the Governing Body with timely information; presenting business or policy opportunities for the enterprise; presenting issues of concern; providing options and consequences of actions on issues; assuring that all professional assistance is available for the Governing Body's deliberation; and the securing of Board decisions and carrying out those decisions within the organization. The questions of Governance include:	**NO OR LIMITED**	**OCCASSIONALY**	**USUALLY**	**YES OR ALWAYS**
1. Is there a Board Policy Manual that addresses the operation of the Board; Board Meeting Procedures; selection of officers; terms of officers; the deliberation of and voting on issues; Board Committees; Committee roles and structure; new Board member orientation; and the responsibilities of the board as it relates to the General Manager and Staff?				
2. Does the Board Policy Manual address the rules of the By-Laws; Open Meeting laws; conflict of interest rules; and compliance with legal regulations?				
3. Are there regularly scheduled board meetings?				

4. Are Board meetings open to the public and if so are they posted so that the public has ample notice of the meeting and the issues and are the Board meetings held where the public has adequate opportunity to observe and provide input to the publicly owned enterprise?				
5. Are Agendas prepared for the Board meeting and distributed to the Board members and appropriate parties sufficiently in advance of the meeting that the Board can review the issues?				
6. Is backup information provided in the Board Agendas such that the Governing Board has adequate information of the pros and cons of decisions on which they are asked to action?				
7. When the Board takes action, or lack thereof, is it clearly articulated so that there is no misunderstanding between members of the Board or direction to the General Manager and staff of the intent of the Board regarding the issue?				
8. Are there well defined issues that are identified as Confidential which are to be addressed only in Executive Closed Meeting Sessions?				
9. Are Board Members adequately briefed on Confidential issues and are they appropriately advised of the legal ramifications of disclosure of any Confidential information?				
10. Are monthly, quarterly and annual operating reports presented to the Board in a timely manner with explanations of variances or issues of concern?				
11. Are annual operating budgets prepared and presented in appropriate detail, in a timely manner for the Board to responsibly act upon approval?				
12. Are Capital budgets prepared and presented in appropriate detail, in a timely manner for the Board to responsibly act upon approval?				
13. Are the revenue results and fairness of the utility rate tariffs presented on a periodic basis for the Board to consider adjustments?				
14. Does the Board, or a Personnel Committee of the Board, conduct an annual or periodic review of the performance of the General Manager?				
15. Does the Board review and approve the major documents of the enterprise such as Pay Scales for the employees; annual audit; annual operating budget; annual capital budget; annual review of utility rate tariffs; periodic review of debt structure; and periodic review of organizational operating procedure manual.				
16. Are there minutes prepared of each Board meeting accurately recording the issue, action and any pertinent deliberation?				
Rankings	3	9	3	1
Governance Average Assessment = 80.25 = B -				

10.3.5. Administration Assessment Administration relates to the staff's day to day administering of the duties necessary to keep an enterprise operation functioning safely, efficiently and effectively with harmony supported within the organizational ranks and with the public that the enterprise serves. The questions relating to Administrative Management include:	NO OR LIMITED	OCCASSIONALY	USUALLY	YES OR ALWAYS
1. Is there an organizational operations manual that identifies the policies and procedures for issues such as purchasing; warehouse ordering standards; warehouse operation procedures; payroll responsibility and activities; banking activities such as daily deposits, authorization for issuing checks, account reserve guidelines and account reconciliation procedures; accounts payable payment procedures; accounts receivable notices and collection procedures; and references to other manuals where appropriate such as personnel manuals, investment policy manuals, technical design and specifications manuals, etc.				
2. Is there a formal (and informal if necessary) established organization structure to carry out the directives of the Board, General Manager and Department Managers to all ranks of the organization?				
3. Are there periodic organization wide meetings to present issues to the organization and receive input from the organization on the respective activities of the organization?				
4. Is there a regular weekly or biweekly top staff level meeting with the General Manager, with subsequent meetings or communication methods, to assure a flow of information to, from and between all elements of the organization?				
5. Are there regular monitoring processes carried out by the various managers, supervisors, crew leaders and front line personnel to assure that the organizations activities are being carried out safely, efficiently and effectively, including monitoring of basic preventive mechanical maintenance, building maintenance and general orderly "housekeeping"?				
6. Are customer service activities and policies established to assure good communications and service with the public with regard to rendering bills for service and product?				
Ranking	1	1	2	2
Administration Average Assessment = 87.3 = B +				

10.3.6. Planning The planning issues relate to long and short range planning of the organizations physical facilities, financial structure and business enterprises. Questions relating to Planning includes:	NO OR LIMITED	OCCASSIONALY	USUALLY	YES OR ALWAYS
1. Is there a long range strategic plan for the organization?				
2. Is there a long range financial pro forma for the organization that anticipates future operating and other revenues, operating expenses, debts, capital expenditures, depreciation and financial reserves?				
3. Does the long range pro forma anticipate future balance sheets and income statements?				
4. Is there a capital improvement plan for each of the operational elements of the organization such as the power plant, electric distribution system, fuel tank farm, water collection, treatment and distribution system, wastewater collection and treatment system include estimates of costs, construction schedules and a capital expenditure requirements schedule so that funding can be scheduled?				
5. Is there a business plan developed for new ventures with capital requirements addressed; sources of new capital requirements identified and letters of funding approval secured; organizational and personnel requirements identified; marketing issues addressed, and risk and legal consideration identified?				
6. Is there a long range personnel plan in place that identifies possible succession of personnel in the event of persons leaving the employment of the organization and does the planning assure that persons identified for succession have had adequate training and opportunity to learn the responsibilities of the new position?				
7. Does the capital facilities planning for new power generation and distribution system take into consideration changing criteria that may have resulted from changing energy prices and new more efficient technology?				
8. Is there a disaster response plan that addresses different natural or man made disasters, including plans that identify command and control issues for the utility; disaster response methods; sources for assistance and procedures to effect such requests; equipment availability lists for utility use and possible use for other governmental departments and a communication plan with backup communication systems identified?				
Ranking	2	1	5	0
Planning Average Assessment = 82.8 = B -				

10.3.7. Technical and Construction Assessment The technical area involves the engineering and technical issues of the facilities and the support systems of the organization. The questions relating to Technical and Construction Management issues include	NO OR LIMITED	OCCASSIONALY	USUALLY	YES OR ALWAYS
1. Is the power plant designed with the maximum efficiency possible within criteria of size, cost and technology available, considering the time of construction?				
2. Are the losses in the power plant being addressed with consideration given to cost effective use of technology upgrades?				
3. Are energy losses within normal ranges within the power plant; the distributions system; metering and customers service segment and theft.				
4. Are the distribution system and customer meter losses being addressed with cost-benefit analysis of corrective actions?				
5. Is the system reliability being addressed with consideration given to cost effective technology upgrades?				
6. Is the power factor (inductive load) issues being addressed in an efficient manner?				
7. Are the fuel tanks being maintained in a manner that assures the longest cost effective life of the tanks?				
8. Is the pumping systems of the fuel tanks efficient and maintained properly?				
9. Is the treatment and delivery of the water providing safe drinking water to the public?				
10. Is there a design construction standards manual for MEC and is it being followed when new construction takes place?				
11. Are new construction being designed with appropriate consideration of technical design standards.?				
12. Are construction jobs designed appropriately prior to commencing construction, with material specifications prepared, materials ordered and construction schedule developed and followed and a follow-up analysis performed to assure technical compliance with the design and costs were within the budget or explanations provided for variances?				
Ranking	3	3	4	2
Technical and Construction Avg. Assessment = 83.2 = B				

10.3.8. Marketing and Public Relations Assessment Marketing and public relations include the marketing of special commodities such as fuel oil to the fishing fleets, LNG to the general public and special electric power, water or wastewater services to the electric customers. It also includes public relations to assure that the public is aware of issues involved with their public utility and also to maintain a public image that helps provide a positive image of the utility. Questions relating to Marketing and Public Relations issues include:	NO OR LIMITED	OCCASSIONALY	USUALLY	YES OR ALWAYS
1. Is there a deliberate, planned and organized, or otherwise effective, marketing effort for the continued and hopefully increased sales of diesel fuel to the fishing fleets?				
2. Is there special programs to address the concerns and issues of the largest diesel fuel customers?				
3. Is there a formal public information program for the electric customers?				
4. Is there an effort to educate and assist the general public and in particular the electric customers in the efficient use of their electrical energy?				
5. Is there a regular public information program, especially in the schools, to assure that the general public is aware of the safety issues involved with electricity?				
6. Is there a good rapport developed with the news media to assure a smooth flow of information from the utility to news media that can be helpful in keeping the public informed of issues regarding their utility.				
Ranking	0	4	2	0
Marketing & Public Relations Avg. Assessment = 82.4 =B-				

10.4. Narrative of Performance Factors

The following narrative discusses the findings related to the various questions and also usually a discussion of normal utility standard practice for utilities of the size and environment of MEC. Due to limited time for the site visit, change of personnel at MEC and poor telephone services to Majuro for more detailed discussions after the site visit, information was not always readily available for some questions. The Consultant utilized best information available and responses to inquires from various sources in the grading and response to the questions.

10.4.1. Operations

Operations relates to the day to day operations of the facilities. Questions of performance are whether the facilities are operated and maintained in a manner that assures safe and reliable service to the public and the employees.

The questions relating to Operational management include:

1. Is the system reliable?

The MEC is a very reliable electric utility system. There are relatively few outages in Majuro, and the outages that do occur are generally localized on the electrical distribution system. Rarely is there a power outage due to generation plant failure. In Island environments, with minimal generation equipment available to the utility because of the high cost of backup systems, and no neighboring power system to provide backup power services, outages caused by the failure of the primary power plant are not uncommon. However, MEC has an excellent record of maintaining continuous operation of its power generation facilities. In September 2006 MEC suffered a severe fire in one of its 3.2 mW Pielstick engines. The fire, which is believed to have been caused by an oil pump failure, caused extensive damage to the engine in which the fire began plus serious damage to an adjacent engine and some damage to a third engine. Even with three of MEC's backup engines out of commission, the power generation has remained reliable in Majuro.

In the area of electrical distribution, MEC has developed an automatic disconnect system that segments the power line in the DUD area such that failures on the most distant reaches of the line do not culminate in failure of the entire line back to the power plant. This aids MEC in keeping outages isolated so that they disrupt the least number of customers.

MEC is fortunate to have received a grant during the 1980's to install underground electrical cables for over 20 miles on the west end of the island toward the community of Laura. The cable installed was of 35,000 volt insulation class rather

than the normal 15,000 volt insulation class that most utilities would have installed and this added quality of cable has helped provide a very reliable system for the line to Laura. There have been failures of some equipment along the cable's length but relatively few cable failures and most such cable failures have been reported to have been caused by local contractors and citizens digging into the line.

2. Are the engine-generators operated in an efficient manner?

The MEC engines in the two Majuro based power plants have been operated in an efficient manner. However, the electrical use to operate auxiliary systems at the two power plants is higher than is normal for similar power plants. Normal diesel plant auxiliary power use is represents approximately 3% to 5 % of the gross power output of the engines. MEC's auxiliary power use is 7.7% of engine output. It may require a more extensive review of all aspects of the power plants auxiliary power systems to determine the reason for these extra losses. However, two items related to the original design of the power plants may be the cause of a large part of the auxiliary power use. In power plant one, the cooling water for the engines is water from the lagoon. There is a fairly large pump that circulates the cooling water to the engines and that pump is operated continuously even when the backup engines are not in use. It is operated continuously because of the time required to "prime" the pump and get water to circulate, thus causing loss of valuable time in the event a backup engine is needed quickly. Another possible explanation for the larger than normal auxiliary power use is the ventilation system for the Power Plant Number Two. In an effort to keep the highly corrosive sea mist from causing damage to the engines and other equipment in the power plant, the building was designed with no natural ventilation system as is the case with most power plants. Of course, most diesel plants are not located in such close proximity to the sea such as the MEC plant. Without any natural ventilation system for the plant to draw the engine heat out of the building the designer installed a system of 15 ventilating fans. Many of these fan motors must be run on a continuous basis causing a reasonably large amount of power use. When the plants were designed, both Power Plant Number One and Two, the cost of fuel was much less and the design features in question were not as critical to the operational costs as they are with the present higher cost of diesel fuel. It will be appropriate for MEC to search out the full cause of the extra auxiliary power uses and make corrective design and operational changes to help reduce these costs.

The two large Deutz diesel engines that are the base load units have operational efficiencies in the range of 15.5 kWh per gallon of diesel fuel burned. The Pielstick engines that provide the back up for the two Deutz engines have operational efficiencies in the range of 14.5 kWh per gallon of diesel fuel burned. The engines are generally maintained in a good manner and necessary periodic maintenance is performed as specified by the engine manufactures. This maintenance is performed by the staff at the power plant, which is commendable to have qualified personnel readily available, thus helping to reduce the cost of hiring off-island mechanics.

3. *Are supplies ordered correctly and in a timely manner?*

Supplies appeared to be ordered in a timely and correct manner. There are always difficulties with ordering and receiving the necessary supplies in an Island environment, but the Consultant did not uncover any major problems with this element of MEC management.

4. *Are the facilities staffed appropriately?*

The MEC facilities are staffed with very well qualified personnel. The Consultant was impressed by the quality of the personnel that MEC had in the various positions. Majuro is fortunate to have the quality of skilled people available to be able to provide staffing for the MEC system. Training is discussed elsewhere in the performance assessment documents but it appears that reasonable training has been made available, although training is a continuous process and additional training would be helpful in some administration areas.

5. *Are there safety regulations in place; safety manuals; safety officers; safety inspections; and regular staff safety meetings?*

There are safety regulations in place and safety manuals available. There was not evidence of a network of safety officers or regular safety meetings. There was some evidence of general "house cleaning" that would be helpful for preventing safety hazards in the power plant.

6. *Are there written operating procedures for all operational areas; power plant; distribution system; customer service; fuel tank operations;*

There are general operating procedures for some systems in the power plant, but most other areas, appear to operate on verbal training of the personnel with relatively close supervision to assure that the systems are operated in a safe, efficient and effective manner.

7. *Are there daily, weekly, monthly, quarterly and annual operating documentations taken, reported and monitored to assure compliance with operating procedures?*

There are fairly good daily, weekly, monthly and annual operating records of the power plant operations and some elements of the distribution system and administration. However, there was not evidence of as extensive reporting and monitoring of various aspects of the system as might be appropriate for similar electric utilities.

8. Are outages responded to in a timely manner?

Outages are responded to in a timely manner and crews are trained to solve the problem and get the electrical service back in operation as soon as safely possible. Upper level supervisory staff and management are actively involved in assuring that outages are responded to quickly.

9. Are there post incident reviews and reports that help identify the problem and set up future actions or maintenance to help reduce the outage incidents?

There was not evidence of a systematic review of outages with follow up assessment and documentation of the causes and remedies for preventing future outages. However, in a system of the size of MEC, where there is great dependence on close relationships and supervisory contact throughout the organization, a system of informal incident reviews often prevails. This appears to be the situation at MEC since as the Consultant would inquire about outage issues, there was a broad common understanding of the causes of an outage and the subsequent solution to help prevent future incidents.

10. Are crew sizes appropriate?

MEC physical facilities appear to be staffed appropriately, with perhaps a very slight over staffing at the power plant. However, MEC does perform all of its own maintenance and this requires extra staff. This has been a planned strategic decision by MEC and it has proven to be of great advantage to MEC by retaining sufficient qualified personnel on staff to perform the necessary maintenance to keep the engines and generators in good operating condition. MEC is in need of additional skilled technical assistance in the area of Finance and Engineering. The present staff is very limited in number and although all appearances indicate that they work very diligently, the magnitude of work that is required to be accomplished is too great for the limited number of staff. The MEC electric utility with its fuel tank responsibility and many outer island power systems is one of the largest operational businesses in the Marshall Islands. In order to operate, maintain, administer and manage such a system requires an adequate number of personnel in the financial and engineering segments of the business. Although the size of MEC may not be equal in size to large systems on other islands such as Siapan or Guam, the work of specifying and procuring supplies; accounting for revenues and expenditures; preparing capital and operating budgets; administering meter reading, billing and collections; designing and constructing a wide variety of facilities; and keeping a staff properly trained is just as extensive in a smaller system as it is in a larger system.

11. Are there construction standards available to all distribution crews to assure the electric distribution system is constructed and maintained in accordance with good operating standards and procedures?

The Consultant did not have the opportunity to observe construction standard manuals available to the distribution crews. However, from observation of the quality of the construction and the generally favorable maintenance of the distribution system, it appeared that the distribution crews are quite familiar with appropriate construction standards. The Consultant is aware that for the past several years, MEC has participated in linemen training programs wherein access to such standards were available and the training made extensive use of electrical distribution construction and maintenance standards.

12. Is the water system efficient?

The Consultant did not have the opportunity to do an extended review of the water and wastewater systems. However, there were several issues that were brought to the Consultants attention that raised questions about the adequacy of the system. The collection system for potable water is the airport runway and apron. Water flows from that area into a 30 million gallon storage tank. The water is passed through a filter system, chlorinated and pumped to the customers. Water is pumped to customers on three days per week for two to four hour durations. Most businesses and families have catchment systems and the water from the utility "tops off" the customer's water tank using an automatic filler valve at the inlet. There are some environmental concerns about the process. When water lines are allowed to drain, any leak in the water line, can cause local ground water and contaminants to flow into the pipe through those leak sites. Although it is reported that all customers are required to have a "back-flow" prevention valve at the location on the utility's water supply pipe, if the "back-flow" valves are not maintained properly, there is the serious possibility of contaminated water from one household's water catchment tank into the general water system, spreading contagious diseases that might exist in a catchment tank.

13. Is the water being treated effectively and within the environmental laws of the Republic of the Marshall Islands?

The Consultant was not able to determine if the water was being treated effectively and within environmental laws of the Republic of the Marshall Islands. However, there is some concern about contamination of the water system as listed in the narrative of question 12 above.

10.4.2. Human Resources

Human resources relates to the personnel that are within the organization to carry out the operations and other functions of the enterprise. Questions of performance are whether the human resources aspect of the organization are properly in place and hired, organized, evaluated and managed appropriately according to the norms of present day personnel management.

The questions relating to Human Resource management include:

1. *Are all areas of the organization staffed appropriately?*

   Although the Consultant was not able to visit each area of the organization, all areas that were visited the staffing level was appropriate. . It was observed that there were adequate personnel but generally there was not evidence of significant overstaffing of personnel. The power plant may have a larger number of personnel than similar Pacific Island utilities but they appeared to be well utilized in providing maintenance functions thus limiting the amount of external contract work that had to be hired. In discussions with top level management about the number and qualifications of the personnel there was a sense that most areas had the appropriate number of personnel except for areas of Finance and Engineering. It was noted that there is a significant amount of work to be performed in the Financial and Engineering areas but there are only a limited number of persons available. This "stretching" of the staff can result in "burn-out" of the personnel and also let significant activities slip by unattended if the condition continues to exist for an extended period of time.

2. *Are properly qualified persons hired and placed into each position in the organization?*

   The Consultant was impressed by the quality of the personnel in the MEC organization. This was noted in all levels of the organization. In discussions with other Island utilities, MEC is often referred to when discussing good quality personnel that are well trained. MEC, in fact, has served as the training site for several regional training classes because of the level of expertise that MEC management has developed within its organization.

3. *Is hiring and promotion done based on merit and qualifications in an equitable manner and without undue influence due to social class, relationships and other non job performance factors.*

   The Consultant did not have the opportunity to review various documents to verify the full level of policies and practices MEC utilizes in the hiring and promotion of personnel, but from observing the level of quality within the organization, all indications are that the policies and procedures are in place and effective.

4. *Has the structural organization been developed to properly staff the organization and provide a clear supervisory and command structure?*

The organizational structure of MEC has been well developed with the proper supervisory functions established and the span of control adequately addressed. Various specialty functions of the MEC organization have been established within the organization to address the varied functions of the organization.

5. *Are there job descriptions of each position?*

The Consultant was not able to obtain a written document of job descriptions of each position. There are contracts for several persons, both expiates and higher level personnel and within those contracts it was reported that descriptions of the job were included. There appears to be an informal understanding of the job duties and responsibilities. In smaller utilities this is not uncommon, especially where people are under close supervision and upper level management make common practice of working closely with personnel at all levels of the organization, as is the case at MEC. When close working relationships exist, common accepted functions of the job can suffice for more formal written job descriptions but as MEC continues to develop, written job descriptions would be beneficial.

6. *Are the jobs classified according to skill level required; mental or physical effort required; safety issues; and knowledge levels so that the positions can be ranked and graded for equitable decisions of pay level?*

The consultant did not find evidence that there was a formal assessment process associated with the classifications of the various positions within MEC. Referring to paragraph (5) above, in smaller, more closely supervised utilities, informal job classification processes are common. However, as listed above, a formalized job classification process would be beneficial for MEC in the future.

7. *Is there a formal pay scale?*

Yes, there is a formal pay scale although it has not been updated since approximately 2002. A copy of the pay scale is included in the minutes of the Board of Directors meeting of October 2002.

8. *Are there periodic salary surveys to assure that pay levels are within appropriate ranges considering skill levels, local personnel available with similar skills and possibility of losing skilled personnel to off-island employers if salary levels are not adequate?*

There has not been a review of the personnel salaries since 2002 according to staff reports. The salaries listed in the 2002 pay plan are reasonably within the competitive range of other utilities in region, not including the utility on Kwajalein Island. Some salaries may in fact be slightly above some of the regional wage rates, but that slight upward level is reflective of the better general economic conditions and thus overall higher salary levels in the RMI as compared to nearby local island economies, excluding Kwajalein and Ebeye.

9. *Is there an employee personnel manual; is it available to all; have all employees read it and signed off on their understanding of its contents?*

There is not a formal employee personnel manual. There are various written and oral policies that address different issues, but the Consultant was not provided with a comprehensive employee personnel manual such as might be common standard practice in a utility of the size of MEC.

10. *Is there a formalized process for rewarding performance such as a semi or annual performance review?*

There is a process for rewarding performance and it has been a practice for several years to provide bonuses to employees. However, the Consultant was not provided with a written document that outlined a formal process including criteria for granting bonuses.

11. *Is the performance review structured to assure that all employees are graded and ranked equitably for consideration of pay increases, promotional issues or performance improvement programs or actions leading to release from employment?*

The Consultant was not provided with documents or documentation regarding performance review processes. In discussions with staff, it was not detected that there were any formalized processes for performance review.

In utilities of MEC's size, it is standard practice for the utility to have a formalized performance and development process. A formalized and documented process helps assure that the employees receive annual reviews of their performance. The performance review process can assist the employee in further development of their skills and correction of any deficiencies. It also provides the utility with the

opportunity to constantly assist the personnel in improving productivity and develop skills of which they are capable.

12. Is there a formalized process for handling disciplinary issues?

There is a process for handling disciplinary issues, although the Consultant was not provided with documentation outlining the process. The Consultant did witness the administration of disciplinary action that resulted in three days of work suspension for excessive absences with out adequate cause. The process was well handled and fairly administered by upper level management personnel.

13. Is there a formalized advertising process to assure that all RMI citizens can have the knowledge about the employment opportunity?

There is a formalized advertising process for hiring personnel at RMI. Open positions are posted and qualified applicants are encouraged to apply. Interviews take place by the appropriate supervisory personnel and qualifications and suitability of the applicant to the position is considered in the hiring of the applicants. No documentation was made available regarding this process, however, there is a process in place for adequately administering the advertisement and hiring of personnel.

14. Is there an orientation and training program for new employees, rather than just "on-the-job learn as you go" so that new employees can quickly be incorporated into the workforce in a productive manner and be given organizational cultural guidance regarding safety issues, proper behavior, ethics and productive job performance expectations.

The orientation and training program for new or promoted personnel is mostly on-the-job training. As mentioned in earlier paragraphs, in smaller organizations such as MEC it is not uncommon for orientation and training programs to be mostly on the job activities with existing personnel who have been in similar positions for many years. This is a satisfactory method in an organization such as MEC, however, an orientation document would be helpful, especially for new hires into the organization.

15. Is there a formal training program for all employees, either with training programs developed and presented by supervisors, or training programs brought to the island, or in special cases, off island training for specialized positions?

There are training programs for many of the employees. MEC has provided very good training opportunities for their personnel, especially in the electrical linemen and power operations sectors. MEC also has several very good Expiate contract

employees who have good technical skills and have provided training for MEC personnel.

10.4.3. Financial

Financial management relates to all issues involved in the sourcing, management, measurement and accounting for the resources, including the physical facilities, financial resources & credit worthiness, of the enterprise.

The questions relating to Financial Management include:

1. *Does the enterprise operation make sufficient revenues to continue operations?*

No, the enterprise operation does not make sufficient revenues to continue operations without significant increases in electric rate tariffs. As presented in MEC's Financial Audit report of FY 2005 operating revenue was $9,712,058 and the cost of power was $11,178,752 and other operating expenses were $3,941,122 for total expenses of $15,119,874 resulting in an operating loss for the electric system of $5,407,816. That loss was partially offset by an operating profit from the sale of diesel fuel to the fishing fleets and others of $2,017,941. Losses of the combined system were $3,389,875. In FY 2004 losses were $3,228,950 for the electric system and with profits of $1,658,991 from fuel sales, losses of the combined system was $$1,569,959. At the time of this report the FY2006 audit was not available.

The MEC electric system had suffered operating losses in all of the previous five years although was aided by profits from fuel sales and in 2002 & FY2003 with $1,866,666 of compact funds diverted to MEC having previously been utilized by RMI to retire the original 1981 loan of approximately $25 million used for the construction of the Fuel Storage Tanks and Power Plant #1.

Net assets of MEC had declined from $5,800,088 at the beginning of FY2004 to $3,958,657 at the beginning of FY2005 to $792,719 at the end of FY2005.

During this time frame, MEC electric rates were 14.4 to 16 cents per kWh (2003-2005) when actual electric costs according to the audit were nearly $0.20 per kWh.

2. *Are monthly invoices paid in a timely manner?*

Generally invoices are paid in a timely manner. Prior to the financial difficulty resulting from Mobil discontinuing the "consignment" method of providing fuel, MEC had a very good record for paying all invoices in a timely manner.

3. *Are account receivables billed, given reminders and collection procedures initiated when necessary?*

Accounts receivables are billed appropriately but collection procedures are not initiated when necessary. MEC has allowed accounts receivables to become a substantial amount; $4.5 million, including $1.1 million owed by governmental affiliates RMI, Majuro Water and Sewer Co. and other governmental parties. During the summer of 2006, MEC began a concerted program to collect accounts receivable and some success was experienced.

4. *Does management seek to enhance the financial condition of the enterprise with profitable sales of product and use profits to keep the electric and water rates to the customers as low as possible?*

The major program for enhancing MEC's financial condition is the sale of diesel fuel to regional fishing fleets and other parties in Majuro. Revenues for FY2005 and FY2004 were $2,017,941 and $1,658,991 respectively. Profits from the sale of diesel fuel have subsidized electric rates by 15% to 20% for several years.

5. *Are there cash reserves established that can assure the enterprise will be able to financially survive a natural or man made disaster or a sudden change in the market or cost of operations?*

MEC failed to develop or maintain any cash reserves. This is a major failing of MEC. An electric utility should always maintain a cash reserve of at least 90 days of operating expenses for emergencies and contingencies. For MEC expenses of $14 million per year, a reserve fund for emergencies and contingencies of $2.5 to $3.5 would be appropriate. In addition to maintaining a reserve fund for emergencies and contingencies utilities should also maintain a Replacement and Renewals Fund. This fund represents cash received from the portion of the rate tariff that is set to cover depreciation of capital equipment. Depreciation is an expense that represents the cost of the use of capital assets. The expense is not a cash expense in the year it is posted as an expense, and thus does not require current cash which is the reason that island utilities often fail to set rate tariffs sufficient to cover this expense item. Electric rate tariffs should be set sufficient to provide for this annual expense and the cash should be placed in a Replacement and Renewals Fund that can be available for financing capital additions and replacements to the electric system. See paragraph 24 below in this section for additional discussion of depreciation and reserves.

6. *Is there an audit prepared annually that is free of major qualifying exceptions?*

Yes, there is a good annual audit of MEC performed by an internationally recognized auditing firm.

No, the Audit is not free of major qualifying exceptions.

There has been one major qualifying statement in the "Notes to Financial Statements" for the past several years. MEC has not addressed this issue adequately. The auditors have noted that MEC has failed to meet income requirements as prescribed for the $12.5 million loan obtained in 1997 from the U.S. based Federal Financing Bank (FFB), and guaranteed by the Rural Utility Service (RUS). The receipt of the FFB loan (often referred to as the RUS loan at MEC and RMI Government) was contingent on MEC maintaining certain income and profitability levels within the electric utility. The main covenant was that revenues would exceed expenses such that net income was 10% greater than the debt payments each year. This provision was placed in the RUS loan "covenants" to assure that there would be sufficient revenues to repay the RUS loan. MEC has faithfully made all payments of the RUS loan but has failed to meet the 10% Operating Debt Service Coverage covenant. MEC apparently concluded that profits from fuel sales were sufficient to assure loan repayment, which it did. Although the RUS loan was being repaid, revenues were not sufficient to provide for funding depreciation of previous capital expenditures or to provide funding or credit assurances for loans for future capital asset investments.

The audit is performed according to the U.S. standard as outlined by the Governmental Accounting Standards Board, Statement No.20, "Accounting and Financial Reporting for Proprietary Funds and Other Governmental Entities that Use Proprietary Fund Accounting. The auditors that perform the MEC audit also perform the audit for the RMI government. Therefore the audit standards used for the MEC audit are typical of audits for governmental agencies.

The Auditors make the following notation in the annual audit:

"MEC considers utility and nonutility revenues and costs that are directly related to utility and nonutility operations to be operating revenues and expenses. Revenues and expenses related to financing and other activities are reflected as nonoperating."

It is assumed that the purpose of this statement is to draw attention to MEC's inclusion within its financial statements the revenues and expenses from sources other than the sale, production and delivery of electricity. The primary revenues and expenses included are related to the purchase and sale of diesel fuel to the fishing fleets. However, it also can relate to how MEC reports costs related to capital assets.

The MEC audit arranges the expenses relating to capital assets in a slightly different manner than stock or enterprise entities might use for management analysis. Thus it is necessary to review the MEC audits with this issue as reference. For good management analysis of the utility some rearrangement of costs in the expense section of the income (profit-loss) is helpful. For example it should be noted that in the MEC audit amortization payments (payments of loan principle) are included much like an operating expense in the income statement rather than separated out as a capital expense as is appropriate for a managerial review of the enterprises financial condition.

For managerial cost analysis purposes, increased clarity of the true break-even condition of the utility is better understood if only actual cash operating costs are included in the upper part of the expense section of the income statement. Thereafter, subtracting the total operating costs from the revenues provides insight into actual break-even "operating" costs. To be considered a viable ongoing enterprise the utility must assure that its revenues are at least covering actual operating costs.

The next group of costs that should be listed in the expense section of the income statement for managerial analysis purposes is a tabulation of the "cost-of-capital" items. These costs often include such items as interest on loans, loan principal payments and depreciation. After deducting these from operating income, it is possible to determine whether the utility is meeting operating costs as well as costs associated with the capital investment of the enterprise.

MEC has not been meeting this standard for many years. Although it has used other revenues to occasionally show positive income, in reality MEC has been in a negative income status for many years. The electric rates have simply not been sufficient, even with supplements from the sale of fuel to the fishing fleets and supplements from the U.S. Compact, to pay for operating expenses associated providing electrical service, especially the rapidly rising cost of fuel at the power plant.

7. *Are internal controls established to monitor and detect improper financial actions of employees or others?*

The annual audit performed by an independent auditor states that it includes "consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of MEC's internal control over financial reporting" thus the auditor expresses no opinion regarding internal controls. However, from general observations and interviews and reviews of documentation the Consultant believes that MEC maintains good internal controls to monitor and detect proper financial actions of employees and others.

8. *Is there any form of managerial cost accounting system utilized to assist management in making sound financial decisions on capital expenditures or improvements to operations?*

There is only limited managerial cost accounting available. The Consultant observed that most cost accounting was developed "in-house" and generally utilized only by the Comptroller and General Manager. There is not a comprehensive managerial cost accounting system that collects and disseminates information to division managers or supervisors that could assist in their making knowledgeable decisions regarding cost of operations in their respective segments of the utility. An example of how this

information might be helpful was observed in the power plant where the focus is primarily on reliability and where lack of thorough cost accounting may have limited supervisors ability to detect operational activities that cause the MEC power plant to have higher than normal station service power costs. Because of the limited number of upper level personnel available in the financial office, managerial cost accounting is one of the programs that is put off when more pressing financial accounting work occupies the majority of the existing staff's limited time.

9. *Is there an annual budget that is developed in sufficient detail to allow for good monthly managerial monitoring throughout the year?*

There is an annual budget and it includes line item listing of major expense items. However, the budget development appears to follow from extrapolation of costs from previous years rather than from a "bottom-up" methodology that starts from an analysis of what programs are required and progresses into the calculated costs of those programs.

The budgets are monitored by upper level management and supervisors and there was evidence that actions are taken to adjust expenditure in the event costs increase or revenues decline unexpectedly.

There are many budgeting processes that are utilized by various utilities but one that begins by projecting the electric sales for the future budget year is an effective method. Since fuel costs often represent 60% to 70% of the budget, an accurate projection of fuel cost is important. Past history of engine and distribution system efficiency is reviewed and a calculation is performed to determine the number of gallons of fuel required to deliver the kWhs to the customers meter for billing. An important number to determine is the number of kWhs that are delivered to the customers meter for each gallon of diesel fuel burned in the power plant engines. This method also assists in determining whether the utility system has above or below normal system losses from the engine to the customer's meter. In MEC's example, using 2006 figures from MEC financial documents, 4,996,258 gallons of fuel were burned in the engines and 56,566,838 kWhs were delivered and billed at the customer's meters. Thus the system efficiency, measured in kWhs/gallon was 11.32 kWh/gallon. Using an estimated 60,000,000 kWhs to be billed for 2007 results in a fuel requirement of 5,300,000 gallons of diesel fuel for power production for 2007. Assuming a cost of $2.20 per gallon for the fuel, results in $11,660,777 for the fuel costs for 2007.

The next major expenditure is personnel. It is appropriate to develop a spreadsheet that lists all personnel, their wage rates, hours worked, estimated overtime hours, benefits, employment taxes, insurance, etc. to determine the cost of each employee. It is beneficial to group the employees according to function, such as power production, electric distribution, administration, etc. so that departmental budgets can be developed which aids in each departmental supervisor being able to more closely monitor their own area of responsibility.

The next major expense item is maintenance, repairs and supplies. It is normal to separate these costs into the respective departmental budgets also.

Some costs are difficult to categorize according to departmental responsibility and such costs are normally included in an Administration budget group.

MEC's budgets do not appear to have been developed in a level of detail that would be easy for the departmental supervisors to monitor their respective budgets. .

10. Are variances in budget expenditures addressed by management in a timely manner to assure cost controls are implemented?

Variances appear to be addressed by management in a timely manner. It appears that most budget monitoring is performed by upper level management and the Comptroller rather than by departmental supervisors. Departmental supervisors might more readily take action to keep their departmental budgets in alignment if they have the information readily available.

11. Is the annual budget monitored monthly and appropriate action taken if budget line items are outside of normal variance?

As listed under paragraph 9 above, the budgets are monitored by upper level management and supervisors and there was evidence that actions are taken to adjust expenditure in the event costs increase or revenues decline unexpectedly. There was not evidence found that the budget monitoring was shared with the entire MEC Board in the form of monthly or quarterly reports to the MEC Board. It is noted that the Chairman of the Board would often be briefed verbally on budgetary issues.

12. Is there an annual capital budget?

There is a capital budget but it was not determined if that budget was developed annually or was an ongoing capital budget that was subject to revision from time to time. There is some concern that the capital budget is intermingled with the operating budget. In the annual audit, capital expenditures are included as part of the expenses of the operating budget which is often a source of confusion for management and the Board in their review of profit and loss statements.

Occasionally it appears in the audit that the capital expenditures are not sufficiently separated in the audit from the operating budget figures. If capital and operating costs are separated, readers of the audit would be drawn to the fact that the capital expenditures are not normal operating expenses. Also MEC does not capitalize annual capital expenditures. MEC does not place capital expenditures such as new power poles, transformers, meters, etc. in the capital asset accounts for later recognition as additions to capital assets in the financial balance sheet. MEC "expenses" all capital expenditures in the year that the capital expenditure is made. This practice perhaps over states the true cost of annual operations and can cause

present day customers to pay more than their fair share of the cost of the capital asset. However, MEC has so many other peculiarities in the expense section of the profit-loss statement, such as not accounting for depreciation of all assets appropriately as discussed above relating to Power Plant Number One, the fuel tanks and the underground distribution system to Laura, that the expensing of capital expenditure on an annual basis may not significantly overstate current operating costs in MEC's case. This practice is also a conservative approach but does understate the true asset value of the utility enterprise.

An effective methodology of budgeting is to prepare a capital budget annually in advance of the operating budget. If loans are to be secured for funding the capital asset, the interest and principal payment schedule should be developed so that it can be included in the operating budget for determination of cash requirements. Depreciation schedules should also be prepared so that future depreciation costs can be considered in the present and future overall annual operating budgets. With figures for interest expenses, principal repayments, depreciation costs, plus funding from current revenues, taken from the capital budget projects and included in operating budget, the utility can better anticipate the electric rate tariffs necessary to support the capital expenditure.

13. *Is there a schedule of the progress of the work included in the capital budget such that purchases of material and expenditure of personnel salaries can be preplanned by financial administrators to assure appropriate cash availability?*

The Consultant did not find a detailed schedule of funds required for capital budget expenditures other than a general schedule of the year or month that the capital project was scheduled for construction. The method of funding many capital projects, other than minor projects like installing or replacing power poles, meters and transformers appear to be from grant funds or U.S. Compact funds. MEC's larger capital projects generally relate to projects such as replacement items at the power plant or new power projects on the outer islands. MEC often works on a reimbursement methodology of such projects or just draws down their bank account balances as they pay for the capital projects. MEC does not maintain a tightly controlled investment program that attempts to maximize interest return on bank account balances, thus the need for careful and detailed capital project expenditures is not as important a factor as if MEC had specialized accounts with investment banks that could secure a few percentage advantage in interest rates.

14. *Is there either a monthly or quarterly full, but unaudited, financial report prepared and reviewed by management and made available to the Board to assure financial goals are achieved?*

There did not appear to be a regular monthly or quarterly financial statement prepared by the MEC financial department. There is regular profit and loss statements and budget updates however. Again there was not evidence that these reports are reviewed with the full Board of Directors on a monthly basis.

15. Is there a Cash Flow statement developed each month and adjustments made in bank accounts to assure cash solvency of the enterprise.

Yes, the Comptroller has developed a good Cash Flow statement program. The cash flow statement is utilized to assure that funds are available for paying all invoices on a timely basis, provided revenues are available. Prior to January 2005 when the present Comptroller was hired at MEC, there did not appear to be a good Cash Flow program. In recent months, the Comptroller has struggled to keep revenues available to pay current invoices, due to the loss of most of the profits previously received from the sale of diesel fuel and also to the heavy debt burden resulting from MEC's efforts to fund the fuel oil inventory.

16. Are all expenditures and revenues recorded in a recognized, categorized accounting system to assure proper monitoring of the enterprise's financial operations?

Yes, all expenditures and revenues are recorded in a recognized, categorized accounting system which assures proper monitoring of the enterprises financial operations.

17. Is there a good asset accounting system in place and is it kept updated?

There appears to be a rudimentary asset accounting system but it is not well developed and little time and effort is invested in maintaining the asset accounting. The MEC staff reports that one of the reasons that capital assets are expensed in the year they are installed into MEC's electrical system is that the present accounting system does not easily provide for placing those capital expenditures in an asset account.

Large assets such as the new Power Plant Number 2 constructed in the late 1990's was placed in the asset section of MEC's financial statements. When MEC was created in February 1984, MEC took over responsibility for the electric system that then existed which included power distribution lines, Power Plant #1, the fuel storage tanks and terminal and the rolling stock, inventory, offices etc. However, as reported to the Consultant by the MEC staff, the financial values of those assets were not placed on MEC's balance sheet. This resulted in MEC not recognizing depreciation for those assets. Had those assets been placed on MEC books and depreciation properly charged for those assets and electric rates established to sufficiently recover depreciation costs, it is possible that a Replacement and Renewals Fund could have been established that would have been sufficient to have prevented the present financial crises facing MEC.

18. Are all accounts payable kept current?

Yes, accounts payable are kept current, to the extent possible considering the recent financial crises. Since MEC began funding the fuel inventory in September 2005, as noted in Paragraph 15 above the MEC Comptroller has struggled to keep revenues available to pay current invoices, due to the loss of most of the profits previously received from the sale of diesel fuel and also to the heavy debt burden resulting from MEC's efforts to fund the fuel oil inventory.

19. Are all accounts receivable monitored and collection procedures initiated when necessary?

MEC monitors the accounts receivable but until recently has not been aggressive in its collection process. MEC has, according to the 2005 audit report, over $4,000,000 in accounts receivable, with over $1,000,000 of that being to affiliated government agencies. It is reported by staff that MEC does not have a process of removing accounts receivable from the financial statements. Therefore it is quite possible that a portion of the $4,000,000 in accounts receivable are uncollectible.

A good collection process is mandatory for a utility to continue to operate as an ongoing enterprise. Utilities that are entities created by the government, often find it very difficult to aggressively collect for electric service rendered because of political pressure to extend credit for just a "little longer" until the customer can secure the necessary finances. However, if RMI chooses to develop a public/private partnership to operate MEC, the private party operating the electric system will most likely have no reluctance to aggressively collect for electric service rendered.

Failure of a utility to aggressively collect for services, including discontinuing electric service, often leads businesses, residents and even governments to procrastinate in making the financial decisions that are necessary for them to adequately pay their bills. Extending credit to such customers usually leads them further into debt and creates a larger debt for which they may not ever recover.

Another issue regarding failure to aggressively collect accounts receivable is that MEC is serving as a "banker" for those customers who do not pay bills in a timely manner. MEC has a fiduciary responsibility to be good stewards of the funds that the public entrusts with them. Extending credit to customers that fail to pay ultimately requires MEC to raise electric rates to pay for those debts, thus causing MEC to place the burden of debt back on good paying customers.

Several island utilities have installed "prepayment" meters to help reduce accounts receivable. Prepayment meters have a readout device and keypad installed in the customers home or business that is connected to a cutoff switch in the base of a specially designed electric meter. Customers pay the utility in advance and get a numerical code that is input into the customers meter keypad, which provides a readout of the dollar amount or the kWhs available on the electric meter. If the

customer fails to replenish the meter with an additional payment to the utility and subsequent entering of a new numerical code, the electric meter will automatically shut off the electric service when funds credited to the meter are depleted. .

The prepayment meters are also helpful in collecting previous accounts receivables. Most utilities using the prepayment meters require that 20% or more of the funds deposited with the customer service first go to repaying outstanding bills and the remaining 80% is then programmed into the numerical code for current electricity consumption. In this manner, the outstanding electric bills can often be collected over a matter of months. Acceptance of the prepayment meters has been very good in the FSM utilities. Pohnpei Utilities has over 90% of their customers on prepayment meters and Kosrae Utilities has approximately 75%. Ebeye has installed prepayment meters but are not utilizing them to the full extent possible

20. Are charges for services such as fuel sales established to maximize revenues?

MEC manages the fuel storage tanks and has done an excellent job of maximizing revenues from the sale of diesel fuel to the regional fishing fleets and others, and still maintaining fuel pricing in a competitive range. It is a delicate balance to price the fuel sufficient to pay costs but yet maximize the revenue without pricing the fuel beyond the fishing fleet customer's other options. MEC has for several years managed to meet that delicate balance in pricing and as a result has been able to secure profits of approximately $7,000,000 over the past 15 years, thus providing MEC customers with over $7,000,000 in lowered electric bills.

21. Are charges for electric service established to assure payment for the cost of the service?

MEC electric rates are too low to cover expenses. MEC has experienced operating losses with electric system operations five of the previous six years. From FY2000 through FY2005 MEC's electric system losses have been $15.9 million and even with profits from fuel sales, losses have totaled $3.6 million. Retained Earnings have decreased from over $4 million in 2000 to $793,000 in 2005 as reported in the 2005 audit.

22. Are electric rate studies done on a regular basis, perhaps each five years, to assure that the rate structures are equitable and that each customer class is paying their fare share of the costs, or as per established organizational policy if one class is to subsidize another?

Electric rate studies are not performed on a regular basis. MEC management has historically reviewed profit and loss statements to determine whether the electric

revenue plus profits from fuel sales was sufficient to meet expenses. Changes recommended to the electric rates were generally percentage increases with some consideration given to comparable regional electric rates. There have not been any "cost of service" studies performed to assure that the electric rates are equitable between customer classes.

It is common for electric utilities to perform a comprehensive electric rate study periodically, often each five years. The rate studies will usually view the performance of he utility historically and perhaps view the anticipated future. The level of revenue is developed and a proposed percentage increase is proposed. After the revenue requirements are developed, the cost to serve the various customers is developed. The costs include the minimum basic costs to cover the customers monthly account maintenance, the fixed costs of the system and the variable costs for providing the electrical energy service. The costs are then allocated to the various customer classes such as Residential, Commercial, Governmental and Industrial. Occasionally a life line type rate will also be considered but such rates are more social-economic based than actual cost-to-serve based.

After costs have been allocated the rates are designed for each of the customer classes. Usually the rate design includes a fixed monthly facility charge, such as $5 for service regardless whether any energy is used. The next component of rate design is the basic energy charge for the kWhs used by the customer each month. The final element is usually a Fuel Adjustment Charge that increases – AND DECREASES – according to the cost of fuel being used at the power plant each month.

For residential, small commercial and small governmental accounts, the basic energy charge may have three or four step-ranges of rates, starting off low, increasing after perhaps the first 250 kWh, and again after the next 750 kWh and perhaps again at a higher usage. For larger commercial, government and industrial customers a similar escalating step-range rate may be developed, but also there is normally a "demand" charge assessed. The demand charge is based on the maximum power that the customer uses during the month. Usually there is a charge of $6 ot $9 per kW charged for each kW of power demand. Special demand meters are required for this type of metering rate.

MEC electric rate structure does not have a basic monthly facility charge, nor do the rates have a step-range component, nor is there a demand charge affixed to the larger commercial, governmental and industrial customers. The MEC rates are very simple in design and may partially reflect actual cost to serve but there may be inequities in the rates between customer classes and it would be appropriate to conduct a rate study in the future after MEC's financial condition improves.

23. *Are adjustable electric rates established that automatically adjust to rapidly changing costs, especially fuel costs, such that the enterprise will not suffer catastrophic financial losses in the event governing bodies do not act on a timely manner in allowing electric rates to change when external conditions change rapidly?*

MEC electric rates do have a provision that adjusts the rates according to the change in the cost of fuel. This has been only a recent development. The lack of a fuel adjustment rate that follows fuel costs is partially responsible for MEC's financial difficulties.

The present "rate template" increases the cost of electricity by one cent $0.01 per kWh for each $5.00 per barrel increase in landed fuel costs. MEC's electric system has efficiency such that 11.3 kWhs of electricity is delivered to a customer's meter for each one gallon of diesel fuel burned at the power plant. At a fuel price of $80 per barrel, the cost per gallon of diesel fuel is $1.90. That one gallon of fuel provides 11.3 kWhs to the customer's meter, therefore the fuel cost per kWh is $0.168 per kWh ($1.9/gallons divided by 11.3 gallons/kWh). At a fuel price of $85 per barrel, the cost per gallon of diesel fuel is $2.02. Therefore at $85/bbl fuel price the cost of fuel to provide one kWh at the customer's meter is $0.179. The present MEC electric rate template increases the electric rate by 1.0 cents per kWh ($.010 per kWh) for the $5 per bbl increase but with MEC's electric system efficiency, the cost of the fuel component of the electricity increases by 1.1 cents per kWh which is very close to tracking the actual cost of increases in fuel. If MEC could get the electric system efficiency up to 11.9 kWh per gallon of fuel burned, the template would exactly collect the correct amount for rising fuel costs.

24. *Are revenues established to properly provide for a positive income statement, even when depreciation is included as an operating expense?*

The electric rates and other revenues have not been properly established to produce a positive income statement. MEC has had electric system losses in every one of the past five years, with positive results showing only when the $1.87 million Compact funds were used to supplement operating expenses. (The Consultant notes that it would have been very beneficial for MEC to have placed the two Compact I payments of $1.87 million in a capital reserve fund rather than utilizing the two years of "windfall" funding to subsidize electric rates.) Electric rates have been much too low to properly cover operating plus depreciation costs.

Also, no depreciation was charged to the fuel or electric operations for the cost of the fuel tanks or Power Plant Number One. Thus rates were not set to collect for the capital costs of those two major physical assets nor were there any financial reserves in place to finance the rebuilding of these facilities when they reach the end of their useful life. The same issue holds true for the twenty-two (22) miles of underground electric power line that was installed from approximately the airport to Laura. The

underground cable was financed with a grant but the MEC staff was uncertain of the identity of the donor. The Laura underground cable is almost 20 years old at present and probably has a thirty (30) year life. It will probably be necessary to begin replacing sections of that cable in the near future. However, since no financial asset was ever established in MEC's financial statements for this cable, no depreciation expense was ever charged against operating revenues to reflect the annual "usage" cost of the cable. Therefore, it will be necessary to fund the replacement of the cable out of either grants, loans or future electric system revenues.

25. *Is depreciation properly charged against operating income with cash generated from depreciation expense properly used for capital additions or placed in secure reserve accounts for future capital additions when the depreciated assets wear out?*

No, depreciation has not been charged properly against operating income nor has the cash generated from depreciation expense been placed in a reserve account for future capital projects. See the discussion in paragraph 24 above. Power Plant No. 2 was financed almost 100% by a loan from the Federal Financing Bank. The principal and interest payments for that loan are being paid for out of operating revenues. The principal payments often are nearly equal to depreciation rates and thus in this instance the electric revenues are providing for capital costs. It should be recognized for future planning that it is often difficult to get 100% financing for capital construction and replacement projects, therefore it is good utility operating practice to establish replacement and renewable funds and to set electric rates sufficient to contribute to such a fund annually.

10.4.4. Governance

Governance relates to the management's working and coordinating with the Policy Governing body of the organization. It relates to the carrying out the duties of providing the Governing Body with timely information; presenting business or policy opportunities for the enterprise; presenting issues of concern; providing options and consequences of actions on issues; assuring that all professional assistance is available for the Governing Body's deliberation; and the securing of Board decisions and carrying out those decisions within the organization.

The questions of Governance include:

1. *Is there a Board Policy Manual that addresses the operation of the Board; Board Meeting Procedures; selection of officers; terms of officers; the deliberation of*

and voting on issues; Board Committees; Committee roles and structure; new Board member orientation; and the responsibilities of the board as it relates to the General Manager and Staff?

There was not a formal Board Policy Manual made available to the Consultant. Staff and Board members were not aware of a formalized Board Policy Manual. There are the Articles of Incorporation of MEC plus the Bylaws. The main sections of the Bylaws address the Shareholder Meetings; Directors and Management; Officers; Corporate Records and Reports; Certificate of Shares; Dividends; Corporate Seal; Amendments: and Indemnification. Within the Bylaws the several sections relate to the setting and function of the meetings; voting rights; organization of the officers; power of the Board; responsibilities of record keeping and similar responsibilities and activities of the Board. There is reference in the Bylaws to the laws of the Republic of the Marshall Islands which has jurisdiction over the activities and actions of the Board.

There are generally accepted informal rules of participation and deliberations in the Board meetings as witnessed in the three Board meetings in which the Consultant participated. In visits with some members of the Board, the members expressed they did not observe a formal process for educating new Board members or orienting them in the issues facing the MEC, other than during informal meetings and observation of activities at the Board Meetings. The MEC does not have Board Committees such as Personnel or Audit. However, in a smaller utility system it is not uncommon for all Board members to participate in all facets of the Board's decisions rather than delegating to a Board committee.

The General Manager for the past five years has appeared to work closely with the Board Chairman, who is also the Minister of Public Works. This practice is often considered sufficient in private corporations but normally in publicly owned utilities, communications are usually extended beyond this *level.*

2. *Does the Board Policy Manual address the rules of the By-Laws; Open Meeting laws; conflict of interest rules; and compliance with legal regulations?*

Without a formal Board Policy Manual, issues such as conflict of interest, compliance with legal issues, etc. are not addressed specifically except as the laws of the Republic of the Marshall Islands serve as the defacto umbrella set of rules and laws for the Board. Regarding Conflict of Interest there did appear to be generally understood policies since during the site visit two Board members were removed from the Board by the President, reportedly due to concerns of conflict of interest. The two Board members were related and/or were employees of a local firm that had submitted an unsolicited proposal for a Public / Private partnership with MEC for the purpose of managing and operating the MEC Fuel Tank Farm and the MEC Power Plants and Electric System.

3. *Are there regularly scheduled board meetings?*

   Board meetings did not appear to be scheduled regularly. The Bylaws establish that there shall be an annual meeting on the first Wednesday in May at 10:00 hours plus the Bylaws authorize the calling of Special Meetings. Normally Boards of public enterprises meet on a regular monthly or bi-monthly basis to review financial, operating, contract, policy or capital improvement projects. MEC Board meetings appear to have occurred in recent years only when Board action was necessary to approve an MEC action such as the approval of a budget, a rate template, fuel contract, etc. There did not appear to be in the Board minutes a record of periodic meetings for routine functions such as review of monthly operating reports and financial statements.

4. *Are Board meetings open to the public and if so are they posted so that the public has ample notice of the meeting and the issues and are the Board meetings held where the public has adequate opportunity to observe and provide input to the publicly owned enterprise?*

   Board meetings do not appear to be open to the general public. The Consultant did not find evidence of public notices being posted for Board meetings. The Bylaws set out that "Called" Board meetings require the notification of the members of the Board of Directors.

5. *Are Agendas prepared for the Board meeting and distributed to the Board members and appropriate parties sufficiently in advance of the meeting that the Board can review the issues?*

   There appeared to be limited agenda material available prior to the Board meetings. Some Board members advised the Consultant that the information for decision making was usually provided at the meeting rather than in advance of the meeting.

6. *Is backup information provided in the Board Agendas such that the Governing Board has adequate information of the pros and cons of decisions on which they are asked to action?*

   Please refer to response to question five above. According to some Board members, there were limited options presented in the informational documents, however this information was not distributed to the Board until the meeting.

7. *When the Board takes action, or lack thereof, is it clearly articulated so that there is no misunderstanding between members of the Board or direction to the General Manager and staff of the intent of the Board regarding the issue?*

   There was limited information available to answer this question. However, some Board members expressed that they were not aware of the implications of some of

the decisions that they were being asked to make. Also, some members of the Cabinet have expressed that they were unaware of the implications of some recommendations that the MEC Board had forwarded to them. One such issue related to the long term Note with Mobil Oil which had an 18% per year interest rate. Apparently some members of the Cabinet had believed that MEC had funds available or would soon have such funds available to pay off the Mobil loan that carried a 1.5% per month interest charge. However, Cabinet members later discovered that MEC did not have the cash available and that the Mobil loan in reality became a multi year 18% loan.

8. *Are there well defined issues that are identified as Confidential which are to be addressed only in Executive Closed Meeting Sessions?*

   It did appear that issues that were confidential were identified as such and were reviewed with the Board in Executive Closed Meetings. Many of the issues that had been before the Board during FY2005 and FY2006 were of a confidential nature due to the fuel contract issues.

9. *Are Board Members adequately briefed on confidential issues and are they appropriately advised of the legal ramifications of disclosure of any confidential information?*

   There is some concern, as expressed by staff and others, that some members of the Board may not have recognized the confidential nature of the information being presented and may have shared part of that information with third parties, an activity that could have adversely affected the financial status of MEC and thus also RMI. Board Policy Manuals usually include notices that Board and Staff Members should always be aware of the adverse affects of inappropriately sharing information of a confidential nature since it can financially and legally impact the Utility and thus the ultimate costs to the electric customers.

10. *Are monthly, quarterly and annual operating reports presented to the Board in a timely manner with explanations of variances or issues of concern?*

    Monthly, quarterly and annual operating reports are reportedly shared with the Minister of Public Works but the Consultant did not find that the same information was always made available to all Board members.

    Normal utility reports should include such information as an income statement (profit and loss); budget update with incomes and expenditures compared to projected budget; an update on capital projects schedules and costs; operational reports regarding sales, revenues, accounts receivable; system operational issues such as significant maintenance activity, implementation or elimination of new practices; cash flow statements; bank and investment balances; and any contract or legal issues. Smaller Utilities often will not have staff sufficient to produce all

such reports each month, and will instead produce the reports on a quarterly basis. This practice can be sufficient provided that management, financial officers and operational personnel have a good understanding of their operational statistics on a monthly basis and able to adequately respond to significant deviations. Quarterly reports should include an unaudited balance sheet of the utility such that management and the Board can determine if the utility will meet its year end financial projections. On an annual basis, an unaudited financial statement with balance sheet, income statement, and sources and uses of cash statement should be available for management and the Board within 60 days after the end of the year. The final audit should be completed and available to management and the Board within 120 days of the end of the fiscal year.

11. *Are annual operating budgets prepared and presented in appropriate detail, in a timely manner for the Board to responsibly act upon approval?*

    Annual operating budgets are prepared and presented to the Board, although some Board members expressed that the documents may not have been available significantly in advance of the time necessary that a decision was required for approval.

    A good budget process will normally begin 90 to 120 days prior to the end of the fiscal year. It is always helpful to conduct a general work session with the Board to review goals and projects for the upcoming year. Thereafter, the staff will have a better concept of projects that are of interest to the Board and community and be able to include those issues within the budget. A helpful process is to have a public presentation of the budget to the Board at least 45 days in advance of the end of the fiscal year which allows sufficient time to make adjustments to the budget if necessary.

12. *Are Capital budgets prepared and presented in appropriate detail, in a timely manner for the Board to responsibly act upon approval?*

    Capital projects were found to be identified and budgets prepared for the projects. MEC management have had a good program of providing capital projects for MEC, at least within the constraints of limited funds.

    A good capital budget process should also begin well before the adoption of the budget. It would not be unusual for adoption of the capital and operating budget to occur 30 to 45 days prior to the fiscal year, making preparation important 60 to 90 days before that. The capital budget should include the schedules for the capital projects, their costs, and their effect on the utility's financial statements and should include recommendations for any change in electric rates that may result from the capital project. The Board should review the capital budget and its impact on the operating budget sufficiently in advance of the development of the operating budget so that its effects can be properly incorporated in future financial costs and rates. Capital budgets should include projects five to ten years in the

future to provide the utility and community to prepare for the projects. Financial "pro formas" should be prepared to aid in understanding the financial impact of the capital projects.

13. *Are the revenue results and fairness of the utility rate tariffs presented on a periodic basis for the Board to consider adjustments?*

    MEC does provide documents that provide information regarding the energy sales and revenues by customer class on a periodic basis. This information is available to the Board but it was not determined whether it was made available in report format on a monthly or quarterly basis. MEC rate tariffs are not complex and are "flat" rates, i.e. the rate is the same regardless of the usage. It is common in the Pacific Island environment to have relatively flat rates. However, to properly reflect the cost of providing electrical service, rates that increase or decrease with increasing monthly use is normally necessary.

    It is common to have a small "facility" charge that is applied monthly regardless whether the customer uses any electricity. MEC does not have such a charge. The facility charge helps the utility recover the recurring monthly cost of reading the meter, issuing and collecting the bills, providing for the capital cost of the electrical system to be available regardless whether it is used, and to help pay for the inherent electrical energy losses in the distribution transformers that exist regardless whether the customer draws any electricity from the system. Utilities often charge a smaller amount for the first 100 to 250 kWh of electricity use per month to reflect the lower operation cost of a small amount of electricity and also to assist smaller customers in what is often called a "life-line" electrical rate. MEC has a "life-line" electrical rate but it is only one cent per kWh lower cost than the regular residential rate. This one cent really does not provide significant assistance to the lower use customers. MEC does limit the rate to any customer that does not use more than 500 kWh per month. Limiting the "life-line" rate to users who do not exceed the "life-line" usage is a good method to keep the lower rate only for those customers who generally qualify as customers in need of some assistance. The fact that the MEC "life-line" usage is at the 500 kWh per month level, it is at a usage level that is probably higher than perhaps necessary to cover the truly "need-based" customers. A lower level life-line usage should be considered.

14. *Does the Board, or a Personnel Committee of the Board, conduct an annual or periodic review of the performance of the General Manager?*

    There was not reported to be a formal annual review of the General Manager. The Minister of Public Works as Chairman of the Board had general discussions with the General Manager of performance issues but there was not evidence of a written performance review. The General Manager received informal approvals or disapprovals from other Board members of issues relating to his general administration of elements of the management of MEC but there was not evidence

presented that these informally discussed issues were developed into a written performance review. There was evidence that some level of bonuses were made available to the General Manager during some of the previous five years,, as well as most other MEC personnel. The presentation of such bonuses is tantamount to expressing satisfaction of the performance of the General Manager irrespective of whether there was a written performance review.

It is general standard procedure to have an annual review of the General Manager. This review is often held in conjunction either with the schedule for review of all personnel by their respective supervisors, or at the anniversary date of the General Manger's employment contract. The annual performance review is the opportunity for the Board of Directors to review the previous year's performance contrasted with the goals and objectives set out for the General Manger. It is also the opportunity for the Board to set goals and objectives for the General Manager and organization for the upcoming year. Usually such issues as system efficiency, projects to be completed, staff development, community relations, expected financial performance of the utility and similar subjects are included in the General Managers performance review. Often monetary rewards or lack thereof are part of the performance review.

15. *Does the Board review and approve the major documents of the enterprise such as Pay Scales for the employees; annual audit; annual operating budget; annual capital budget; annual review of utility rate tariffs; periodic review of debt structure; and periodic review of organizational operating procedure manual.*

    It was found that the Board of Directors has been appropriately included in the approval of most of the major documents, plans and decisions of MEC. This is especially true of the annual operating budget which is one of the main MEC documents. Also the Board of Directors receives and reviews the annual audit of MEC which is another of the most important of MEC's documents. There have been numerous Board meetings, especially during FY2005 & FY2006, regarding debt issues of MEC. It appears that there were Board meetings held and discussions and approvals followed when major debt issues were encountered. Throughout the minutes of the Board of Directors for the past five years there is evidence of reviews, discussions and approvals of various capital projects throughout MEC's Majuro's facilities as well as MEC's electric utility facilities on several of the other Marshall Islands. Therefore it appears that it was standard procedure for capital projects to be reviewed and approved by the Board as is normal standard procedure. In fact the presentation, review and approval of major construction projects tend to be the dominate activity of the Board.

    Staffing levels, authorized positions and pay plans are also normal documents that Boards of Directors periodically review and approve. It was reported by staff that there had not been a change in personnel pay plans or significant changes in staffing levels for several years. The pay plan under which MEC was operating was adopted in October 2002. If pay plans and authorized positions are

satisfactorily serving the needs of the organization as well satisfactory to retaining personnel, it is not uncommon to go three or four years without a pay and personnel plan review. This appears to be the case with MEC. There is not a formal organizational operating procedure therefore there was not evidence of the Board adopting or reviewing such a document.

16. *Are there minutes prepared of each Board meeting accurately recording the issue, action and any pertinent deliberation?*

    There appears to be adequate minutes taken and recorded of all MEC Board meetings. In most cases there are brief listings of some discussion of the issues in the minutes, leading to the conclusion that there were various views presented by the Board members and actions taken accordingly. Generally there is not evidence of major agenda backup information available or referenced in the minutes. This is consistent with reports from some Board members that much of the backup information was presented at the Board meetings rather than in advance and that information was often in the form of verbal reports and briefing documents rather than more extensive written documents. Most of the Board minutes from mid FY2005 to the date of this performance audit (October 2006), concern the fuel supply negotiations and financing of the fuel inventory. Apparently this issue had such an overriding dominance on the activities of MEC that there were few other issues that the Board had time to undertake.

10.4.5. Administration

Administration relates to the staff's day to day administering of the duties necessary to keep an enterprise operation functioning safely, efficiently and effectively with harmony supported within the organizational ranks and with the public that the enterprise serves.

The questions relating to Administrative Management include:

1. *Is there an organizational operations manual that identifies the policies and procedures for issues such as purchasing; warehouse ordering standards; warehouse operation procedures; payroll responsibility and activities; banking activities such as daily deposits, authorization for issuing checks, account reserve guidelines and account reconciliation procedures; accounts payable payment procedures; accounts receivable notices and collection procedures; and references to other manuals where appropriate such as personnel manuals, investment policy manuals, technical design and specifications manuals, etc.*

The Consultant was not provided a copy of an organizational operations manual but the Comptroller advised that there are policies and procedures for financial issues.

There are standard practice policies in place for customer services but the Consultant did not obtain a written copy of the document.

Standard utility practice is to have a written policy and procedures manual for the various departments. Such a document is particularly important for the financial and customer interface issues. The Board of Directors usually reviews the financial and customer service policy and procedure manual on a periodic basis.

2. *Is there a formal (and informal if necessary) established organization structure to carry out the directives of the Board, General Manager and Department Managers to all ranks of the organization?*

There is a formal established organization structure at MEC. There is a block diagram organization chart of the various functions and departments. The MEC is organized in a very appropriate and standard manner to accomplish the many diverse functions of MEC. There is some lack of detail in the organization chart. Normally it is appropriate to have a broad block diagram of the organization structure but a follow up detailed organization chart of each of the departments, showing the names and titles of the individuals.

Detailed organization charts provide a clear visual representation of the supervisor of each person in the department. The detailed organization charts allow the supervisors and crews to know who is responsible for the work group and whom it is that conducts the annual personnel review of the various crew members.

3. *Are there periodic organization wide meetings to present issues to the organization and receive input from the organization on the respective activities of the organization?*

The Consultant was not able to determine if such meetings were taking place but from discussions with staff it was apparent that information was being transmitted throughout the organization either via generalized meetings, memos or personal contact with upper management.

4. *Is there a regular weekly or biweekly top staff level meeting with the General Manager, with subsequent meetings or communication methods, to assure a flow of information to, from and between all elements of the organization?*

The General Manager has frequent meetings with all of the top level staff members on a daily basis. This is particularly true of meetings with the Assistant General Manager, Comptroller, Engineer and customer service personnel since all parties have offices in close proximity. The General Manager also makes very effective use of email messages

to communicate issues quickly to members of the staff. All members of the top staff also have a good flow of information with their respective organizations which is beneficial in helping MEC operate smoothly.

Weekly or biweekly meetings for the top staff as well as the various crews are beneficial in that it provides a formal time structure for all parties. In this manner the regular meeting serves as a deadline for all parties in their preparation of information and in setting a time for specific decisions to be made or to get answers to questions. Impromptu meetings are convenient and very good for maintaining flow of information, but formal weekly or biweekly scheduled meetings tend to aid in covering a larger range of subjects and, as mentioned, serve as deadlines to accomplish tasks.

5. *Are there regular monitoring processes carried out by the various managers, supervisors, crew leaders and front line personnel to assure that the organizations activities are being carried out safely, efficiently and effectively, including monitoring of basic preventive mechanical maintenance, building maintenance and general orderly "housekeeping"?*

There are monitoring processes carried out by the managers and supervisors to assure that the organizations activities are being carried out safely, efficiently and effective. Evidence of the effectiveness of the organization is particularly evident in the electric power generation and distribution systems. The power plant is monitored carefully and maintenance activities have been very effective in assuring the reliability of the power plants. The distribution system likewise has been effectively monitored to assure proper maintenance which has resulted in a high level of reliability. Efficiency monitoring is an element to which MEC will need to give additional attention since there are concerns about technical efficiencies in the power plant, distribution system, metering and bill collecting areas.

6. *Are customer service activities and policies established to assure good communications and service with the public with regard to rendering bills for service and product?*

There is serious concern that there is a breakdown in providing information to customers about the importance of paying bills in a timely manner. The evidence for this is the large size of the accounts receivable. The concern with collections extends throughout the entire range of customer classes from residential, commercial to government offices and affiliated government accounts such as the Majuro Water and Sewer Corp. The accounts receivable figure in the financial statement for FY2005 is approximately $4,000,000, a value far too high for an organization of MEC's size. The accounts receivable for the Majuro Water and Sewer account is approximately $900,000. With electric rates that during 2005 were hardly covering fuel costs, adding to that a lack of collections, has been one of the elements, although not the main element, that had put MEC in a very serious financial condition.

Granting extra time for customers to pay bills often seems to be a generous and proper policy. However, the extension of such credit often prolongs the inevitable decision the customer must make, that is to either change their electric usage habits or secure the necessary financial income or resources to pay for their usage. Granting non paying customers credit requires the utility to use funds from good paying customers to cover costs. Utilities are usually not chartered to provide such banking services. Failure to discontinue service to non paying customers also often requires the utility to raise electric rates on the good paying customers to cover the "loans" that the utility chose to extend to the non paying customers, and this is a policy that is very difficult to explain to good paying customers.

10.4.6. Planning

The planning issues relate to long and short range planning of the organizations physical facilities, financial structure and business enterprises.

Questions relating to Planning includes:

1. *Is there a long range strategic plan for the organization?*

The staff reviewed with the Consultant several long range capital projects that are the main elements of MEC's long range strategic plan. The staff did not have written long range plans for the future financial conditions, organizational structure, or other non capital projects that are often included in a strategic plan.

A long range strategic plan is a valuable tool for a utility. The issues covered in a long range strategic plan will normally include organizational development plans, service and organizational policy issues, future business development concepts, financial projections, public relations and marketing goals in addition to the necessary capital replacement and improvement projects. A good strategic plan will cover at least five years and often it is helpful to extend out to 10 years. It is helpful to have a written document that the organization can continue to review and by which they can set monthly and annual goals. A strategic plan should be developed with the involvement of the Board of Directors and also should include involvement by the different management and supervisory levels of the organization. By including the various organizational groups in the planning process, there is better "buy-in" to the plan and thus a better opportunity to assure that the strategic plans projects are carried to fruition.

2. *Is there a long range financial pro forma for the organization that anticipates future operating and other revenues, operating expenses, debts, capital expenditures, depreciation and financial reserves?*

There is not a long range pro forma for the organization. This is a function that either the General Manager or the Comptroller normally develops. However, MEC was without a Comptroller for over a year prior to the arrival of the present Comptroller in January 2005. Since January 2005 the present Comptroller has been extremely busy with bringing the financial documents up to proper level, plus substantial work has been required to keep the financial affairs of MEC in order due to working cash problem, thus very little time was available to prepare a long range pro forma.

Long range pro formas are helpful in predicting the future financial condition of the utility. A projection of future sales is made and coupled with the anticipated rates in order to determine the expected revenues. Operating, financing and construction expenditures are then included in the pro forma to determine the future cash flow statements as well as the profit and loss statements. The long range pro formas can help management and the Board detect future financial issues and are thus beneficial in developing plans to meet the any future financial problem.

3. *Does the long range pro forma anticipate future balance sheets and income statements?*

See discussion in paragraph 2 above. Since there is not presently a long range pro forma being developed, there is not a projected income statement of balance sheet developed.

In the development of a long range pro forma, it is helpful to develop projected income statements and balance sheets in order to see the effects of such issues as depreciation, debt, financing costs, etc. on the future financial statements. Particularly if the utility desires to secure long term loans from commercial banking sources, the long range pro forma plus projected income statements and balance sheets are very helpful in assuring the lending agencies that the utility has the capability to repay the loan.

4. *Is there a capital improvement plan for each of the operational elements of the organization such as the power plant, electric distribution system, fuel tank farm, water collection, treatment and distribution system, wastewater collection and treatment system include estimates of costs, construction schedules and a capital expenditure requirements schedule so that funding can be scheduled?*

There is a capital improvement document for most of the electrical department areas. The Consultant did not obtain a copy of any projected cash flow requirements associated with the proposed capital projects.

It is good utility practice to develop a good schedule of future capital projects and major maintenance expenditures with a schedule of anticipated payments for the projects.

Many projects extend over a period of several months; some over more than one year, and thus it is helpful to the Comptroller to know when capital funds are needed to pay the periodic invoices for the projects. This also helps the Comptroller in making investment decisions of the utilities cash reserve funds such that the maximum return on the investment is possible.

5. *Is there a business plan developed for new ventures with capital requirements addressed; sources of new capital requirements identified and letters of funding approval secured; organizational and personnel requirements identified; marketing issues addressed, and risk and legal consideration identified?*

MEC has developed several new businesses such as the electrical systems that they have set up on several of the outlying islands. It appears that business plans were developed for these projects since all projects are operating satisfactorily.

6. *Is there a long range personnel plan in place that identifies possible succession of personnel in the event of persons leaving the employment of the organization and does the planning assure that persons identified for succession have had adequate training and opportunity to learn the responsibilities of the new position?*

There was not a documented long range personnel plan made available to the Consultant. However, there was information available that informal personnel plans have been developed by the General Manger and other managerial and supervisory personnel that address the succession of people and positions in the organization.

In smaller utilities it is not uncommon that personnel plans are somewhat informal. However, it is appropriate to have some level of personnel plans established that can be shared with the Board so that if vacancies should unexpectedly arise, the Board can be assured that qualified and trained personnel can quickly step into the vacancies and continue the operations of the utility. In the present situation at MEC the succession of the General Manager has been left unresolved, placing many critical MEC decisions pending until the return of the General Manager from an extended leave.

7. *Does the capital facilities planning for new power generation and distribution system take into consideration changing criteria that may have resulted from changing energy prices and new more efficient technology?*

At present there are no plans for additional major generation facilities or major changes to the electrical distribution system. The diesel engines that MEC installed in power plant number two in the late 1990's have very efficient generators which has been providing value to MEC customers since they became operational in 1999. On the outer islands, there is substantial activity taking place, primarily through grant

funds from the European Union and other grant sources to provide energy systems. The European Union has done extensive work to analyze the appropriate alternative energy possibilities for the outer island projects.

MEC also assisted in recent studies to determine if copra could be utilized as a fuel for the diesel engines. No final decision has been made on proceeding with copra as a fuel.

8. *Is there a disaster response plan that addresses different natural or man made disasters, including plans that identify command and control issues for the utility; disaster response methods; sources for assistance and procedures to effect such requests; equipment availability lists for utility use and possible use for other governmental departments and a communication plan with backup communication systems identified?*

MEC has plans in place that can be activated when a natural disaster occurs. The utility has had a history of good command and control communications during the minor disaster that have occurred therefore those same systems are anticipated to serve MEC well if a major disaster should occur.

10.4.7. Technical and Construction

The technical area involves the engineering and technical issues of the facilities and the support systems of the organization.

The questions relating to Technical and Construction Management issues include:

1. *Is the power plant designed with the maximum efficiency possible within criteria of size, cost and technology available, considering the time of construction?*

The present power plant was designed with very good and efficient engines. The engines are of a high quality design. The engines are slow speed thus maintenance costs are less than would be experienced with high speed engines. There is some concern about the electrical power that the station utilizes and this issue will need to be addressed.

2. *Are the losses in the power plant being addressed with consideration given to cost effective use of technology upgrades?*

The losses in the power plant for station service energy are greater than normal. See discussion in paragraph 3 below. Since MEC is not planning any power plant technology upgrades of the power plant at the present time, no information was available whether

station service and other losses were being considered. There had been some discussion of replacing one or two of the engines damaged in the September 2006 fire, but no definitive decision had been made at the time of this study.

3. *What are the energy losses within the power plant; the distributions system; metering and customer's service segment and theft and are they within the normal range of similar utilities?*

The losses in the power plants are greater than similar diesel generating stations. It is believed that the losses are between 6.8% and 7.7%. Normal losses would be expected to be in the range of 3% to 5%. It is believed that some of the extra losses are a result of the building design. The building was designed to keep sea mist out of the engine room. However, to remove the heat caused by the engines, seven fans have been installed in the upper sections of the solid walls of the power house. Many of these fans operate on a continuous basis. Many diesel generating stations do not have such powered ventilating systems, but rather have open sided walls and ventilating louvers on the roof. However, most diesel engine plants are not located with in 100 yards of the sea as is the case with the Majuro power plant.

Another possible cause of the extra station service energy use may be the continuous operation of the cooling water pumps for power plant number one. The engines are cooled by water pumped from the lagoon. The design is such that "priming" the pumps is very time consuming, therefore the plant operations personnel keep the pump(s) running continuously, even during times when power plant number one engines are not needed for service. They do so because if one of the newer engines in plant two trips off line, the operators must quickly get another generator on line. The delay required to prime the cooling pumps may cause the plant operators to trip off feeder circuits to reduce the load until the back up engine is brought on line. It may be appropriate to investigate some sort of system where by the pipe line can remain charged full of water thus eliminating the need to prime the pumps.

There may be other reasons for the less than optimum station service energy use, and thus it is appropriate to conduct a complete review of the efficiency operations of the plant.

The losses in the distribution system are believed to be in the range of 17% to 22%. Normal losses for a distribution system, and associated metering, are in the range of 8% to 10%. It is believed that some of the losses in the distribution system are a result of underutilized transformers, i.e. larger than necessary transformers were installed in anticipation of greater customer load that did not materialize. The cost to install smaller sized transformers is high; therefore a careful analysis of this issue should be made.

The probable cause for much of the distribution system losses is the metering system. See the discussion in paragraph 4 below.

Another expected reason for the higher than normal losses in the distribution system may be the status of the 22 miles of underground cable from the airport to Laura. That cable is approximately 20 years old and it is possible that there is some leakage of that cable, although in such cases, a fault usually follows and the cable totally fails. However, the cable should be checked for deterioration.

An additional energy loss is the 600 plus street lights that are connected to the distribution system that are not metered or accounted for in calculating the losses of the distribution system. The energy use of the street lights should be calculated and properly accounted in the distribution system losses. It should be noted that the street lights in Majuro are all mercury vapor type lights. Mercury vapor lights are very inefficient. Most utilities have changed out all of their mercury vapor lights with high pressure sodium lights, that provide the same amount of light for half the energy use.

4. *Are the distribution system and customer meter losses being addressed with cost-benefit analysis of corrective actions?*

Distribution system and meter losses had not been addressed as of the time this study was being conducted. MEC has not had a program of testing electric meters. There is a meter test instrument available to test meters but it has not been used. MEC has had a practice of never breaking the factory seal on an electric meter and thus no meter has been cleaned or tested.

Standard operating procedure is to test all large commercial meters either annually or certainly each two years. This is especially true of instrument rated meters since the usage is quite large on such meters there is a higher probability of failure of the metering system since the meter depends upon voltage and current transformers to transform the high voltage and current downward to useable levels in a meter. Weather and natural effects can cause the transformers to fail and the meter only registers part of the energy used by the customer. Thus instrument rated meters should be tested annually. Residential and small commercial and government meters should be tested on 5 to 7 year intervals. Meter readers should be trained to inspect every meter each month for damage or evidence of tampering.

5. *Is the system reliability being addressed with consideration given to cost effective technology upgrades?*

MEC system reliability is quite good and MEC has installed equipment that has help assure a reliable electric distribution system.

6. *Is the power factor (inductive load) issues being addressed in an efficient manner?*

There is evidence that some losses in the distribution system are caused by the lack of capacitors on the power line. Capacitors provide reactive power that offsets reactive power used by electric motors and florescent light ballasts. Without installation of capacitors on the distribution line near the electric motor loads, the energy for the reactive power must come from the electrical generators. This causes extra power and thus fuel requirements at the power plant and also from the energy losses in the wire resistance as the electrical current flows from the power plant to serve the motors inductive load. It would be appropriate for MEC to review the reactive power conditions of the distribution system to determine if capacitors could be beneficial.

7. *Are the fuel tanks being maintained in a manner that assures the longest cost effective life of the tanks?*

The fuel tanks are generally being maintained in an effective manner. Two of the tanks have not been utilized for several years and it is anticipated they need repairing. There are some superficial corrosion problems on the tanks, such as stair railings, etc. but those issues are not determined to be of a critical nature. MEC has had a good program of keeping the exterior of the tanks painted thus having kept the corrosion to a limited level on the exterior of the tanks. The inside of the tanks will need attention, but the Consultant did not make a detailed inspection of the tank interiors.

8. *Is the pumping systems of the fuel tanks efficient and maintained properly?*

The Consultant did not have an opportunity to review these systems, however there was reportedly conflicting reports that the pumping and metering system needed work and some reports that the systems were generally in fair condition. It would be appropriate for MEC to analyze the condition of the fuel oil pumping and metering system to assure the integrity of the pumping and piping system and the accuracy of the metering.

9. *Is the treatment and delivery of the water providing safe drinking water to the public?*

The Consultant was not able to obtain sufficient information to assure a good response to this issue. There is a concern regarding the periodic filling and draining of the water pipelines. When water pipe lines are depressurized and allowed to drain out, they can form a vacuum on the customer's connections and also on any possible leak holes in the water pipe. The vacuum can draw in water from the customers system if a proper

backflow prevention device is not installed, or working correctly, and also the vacuum can draw contaminants in from any leak holes in the pipe. When the water pipe is again charged with water, the contaminants could flow into the customers drinking water supply. Most water system maintain water pressure on the system at all times which prevents such possible introduction of contaminants.

10. *Is there a design construction standards manual for MEC and is it being followed when new construction takes place?*

The Consultant was not provided with a construction standards manual. However, regarding the electric distribution system, the power system appears to be well designed, therefore it is evident that a good construction standards are being followed.

11. *Are new construction being designed with appropriate consideration of technical design standards?*

It is assumed that new construction is following existing construction standards which the Consultant found to be satisfactory.

12. *Are construction jobs designed appropriately prior to commencing construction, with material specifications prepared, materials ordered and construction schedule developed and followed and a follow-up analysis performed to assure technical compliance with the design and costs were within the budget or explanations provided for variances?*

The Consultant was not able to observe this process of the design, project management and construction. However, from observation the systems look well constructed and costs for construction did not appear to be out of the ordinary.

10.4.8. Marketing and Public Relations

Marketing and public relations include the marketing of special commodities such as fuel oil to the fishing fleets, LNG to the general public and special electric power, water or wastewater services to the electric customers. It also includes public relations to assure that the public is aware of issues involved with their public utility and also to maintain a public image that helps provide a positive image of the utility.

Questions relating to Marketing and Public Relations issues include:

1. *Is there a deliberate, planned and organized, or otherwise effective, marketing effort for the continued and hopefully increased sales of diesel fuel to the fishing fleets?*

MEC's marketing effort is conducted mostly by the General Manger in one-on-one visits with the various major fuel customers. There did not appear to be a comprehensive marketing plan, one that the Board had reviewed and approved, but rather an informal marketing of the fuel to the normal group of fishing fleet customers and other customers.

2. *Are there special programs to address the concerns and issues of the largest diesel fuel customers?*

There is a special price program for the larger fuel customers who purchase large volumes of fuel over a selected period of time. There were mentions of concerns about pricing and reliable availability by the some fuel customers. The pricing by MEC seemed quite fair when compared with other regional fuel providers as related in the above paragraph on fuels.

3. *Is there a formal public information program for the electric customers?*

MEC maintains a very good web site that provides substantial information about the electric system and tips on electrical issues.

4. *Is there an effort to educate and assist the general public and in particular the electric customers in the efficient use of their electrical energy?*

The MEC has not had a significant energy conservation education program for the general public on the efficient use of their electrical energy.

At a time when energy costs are rising significantly it would be appropriate to have a good program to educate customers about energy conservation and efficient use of electricity. Some people in the electric utility industry feel that encouraging customers to utilize their energy more efficiency is self defeating for the electric utility, causing usage to go down and possibly rates to go up to offset the decline in sales. And energy conservation programs often do cause usage to decline. However, one of the main tenants of a publicly owned electric utility is to be of service to the customer, not to view the electric utility as a revenue sources. Therefore one of the main goals of a publicly owned electric utility is often described as helping the customer utilize their energy as efficiently as possible and thus keep their energy costs as low as possible consistent with their own decision for the level of service they desire. Doing so will save natural resources such as fuel and allow the customer to retain more of their own money which

they will then have to spend on other goods and services. The reduction in use and decline in revenues for the utility are usually gradual and can be accommodated.

5. *Is there a regular public information program, especially in the schools, to assure that the general public is aware of the safety issues involved with electricity?*

There are not significant regular public information programs for the public and in the schools regarding safety issues with the electric utility.

6. *Is there a good rapport developed with the news media to assure a smooth flow of information from the utility to news media that can be helpful in keeping the public informed of issues regarding their utility.*

There did seem to be a good rapport between MEC and the news media. The news stories printed in the local newspaper seemed to be fairly balanced with a listing of the relevant issues in a balance manner.

The relationship with the news media is always a delicate balance since the newspaper is ethically charged to be objective, balanced and sometimes investigative in their seeking and reporting the issues. That balance should be respected and the utility should use care not to expect the news media to carry only the utility's side of story, especially if there are conflicting issues with other parties. It is good utility practice to maintain openness with the news media, especially considering that the electric utility is a publicly owned entity. The news media also must realize that some information is confidential and the release of such information could be financially damaging to the utility and thus could cost the customers in higher rates if that information is divulged and MEC is placed at a disadvantage in some negotiation.

11. KWAJALEIN ATOLL JOINT UTILITY RESOURCES - KAJUR.

The Kwajalein Atoll Joint Utility Resource was established in December 1990 by the Kwajalein Atoll Development Authority (KADA)[3] and the local atoll government (KALGOV) to manage Ebeye's power facilities and a desalination unit utilizing power station waste heat. The KAJUR Board had consisted of three members and was chaired by KADA's chairman. KAJUR was owned by KADA (75%) and KALGOV (25%). KAJUR receives an annual operating subsidy from GMI through KALGOV and receives large advances periodically from KADA to cover operating deficits. The initial facilities were constructed in 1987 and were managed under an "evergreen" contract by International Bridge and Construction Company (IBC) of Guam which employed an expatriate plant manager and an engineer. Contract terms were negotiated each year. The Ebeye/Gugeegue distribution system which was built by IBC. It is the operated by KAJUR personnel.

The operation of the KAJUR power system deteriorated in the late 1990's and in 1999 KAJUR put forth an RFP seeking a contract for operation of the power system. MEC submitted a proposal but was not selected. The American Samoan Power Authority (ASPA) submitted the winning proposal. ASPA provided a General Manager, Plant Superintendent and other maintenance personnel to oversee KAJUR'S operations for 2000 through 2003. For the years of 2004 and 2005 an employee on leave from ASPA along with two other technical and supervisory personnel entered into contract with KAJUR for the management and operation of the power and water utilities for KAJUR on the Ebeye ATOLL.

At the time the Consultant performed a site visit on Ebeye on October 25, 2006, the Atoll was suffering from major power outages. Power was being provided to half of the island on four hour shifts due to failed power generating equipment.

The operation of the waste heat desalination unit next to the power plant was phased out of service several years ago and replaced with Reverse Osmosis desalination units.

The physical facility of the Ebeye electrical power system is in poor condition. The four relatively new 1000 kW Cummins electric generators that were placed in service in 2000 are not in good condition. Two units were sent off island for repair earlier in 2006 and have been returned and placed back into service. The electric generators on the four units have suffered severe sea mist and weather related damage to the windings and housings due to the location and orientation of power house next to the ocean and lack of appropriate protective enclosures and measures to prevent the corrosion.

[3] Report by the World Bank, 1992, www-wds.worldbank.org/.../WDSP/IB/1999/09/17/000009265_3961001182903/Rendered/INDEX/multi_page.txt - 182k -

The distribution system on Ebeye is mostly underground up to the location where the power line goes overhead to serve the Island of Gugegwe to the north of Ebeye.

KAJUR has recently brought in personnel to administer the financial and customer service areas and their work appears to be assisting KAJUR in developing reasonably effective accounting records, data bases and attention to customer service details. Prepayment meters were installed on nearly all customers which should have been very helpful in collecting accounts receivable. However, the collection for unpaid billings has not been administered correctly, perhaps due to politically issues. The accounts payable is still high, even though Ebeye has some of the highest per capita incomes of the Marshall Islands, according to RMI census documents.

The water system on Ebeye is the reverse osmosis system but maintenance problems persist. One of the two systems was down for maintenance during the Consultants visit to Ebeye. The wastewater plant, a "race-track" type activated sludge system, was not in service at the time of the site visit and looked to be in such disrepair that it is questionable whether it could be made operational. Lacing a treatment facility, raw sewerage was being pumped out into the Kwajalein Atoll lagoon. It was reported that the sanitary conditions on the lagoon side beach of Ebeye often left the waters in that area unfit for human contact.

Serious financial, managerial and technical resources will need to be provided to KAJUR to bring the utilities up to a respectable, operational, reliable, efficient and safe condition. The most significant requirement is solid, firm management attention to keep the utility system's physical facilities operated and maintained properly and the financial discipline to establish and adhere to good budgets, rates, billing and collection processes.

12. OVERVIEW - MAJURO WATER & SEWER CO.

12.1. Sources of Water

Since Majuro has no lakes or streams and the height of the atoll is only 33 feet at its highest point, there is no naturally occurring surface water.

The atoll does have fresh water in the form of the "Laura Lens" which is a freshwater envelope of water that floats above the denser ocean water. The lens is replenished via rainwater on the atoll, but is certainly vulnerable to contamination and diminishment through drawdown and drought. In fact, during the summer of 2005 stored water supplies in the capital diminished to approximately 15 million gallons of water, with restrictions in place to restrict demand. [Billy Roberts, Pacific Magazine, June 21, 2005]

Average rainfall in Majuro is about 130 inches per year. Rainfall varies seasonally with a dry period from January to April, with the balance of the year being wetter.

There are currently seven water supply wells, with a capacity of approximately 300,000 gallons per day.

Rainwater is also collected from catchments located at the Amata Kabua Airport, and stored in a 30 million gallon ground storage reservoir located there. Most homes and businesses also have their own catchment systems for collecting rainwater runoff, primarily from roofs.

Additionally, many landowners do dig their own wells by hand. These wells can be as shallow as 6 to 10 feet, and generally are 2 to 4 feet in diameter. Water from these wells is used principally for household chores such as washing clothes, bathing and cooking.

12.2. Treatment of Water

The Marshall Water and Sewer Company uses a combination of Sand Filtering and Chlorination to treat its raw water supply prior to filling storage tanks.

12.3. Distribution System

This treated water is generally pressurized into the distribution system twice a day (6:30 – 9:30 am, and 4:30 – 8:30 pm) three days a week (MWF.) The water flows into individual customer catchment or storage tanks, where it is commingled with the customer's own raw water. Most building and household catchment tanks are equipped with automatic fill valve mechanisms that regulate filling of the tank when the distribution line is

pressurized. This system generally requires that residential customers boil commingled water.

The distribution system itself appears to be generally well maintained, although no data was made available indicating system losses. Previous statements by management indicate the system losses to be in the neighborhood of 25%. In addition, no requirements exist for backflow prevention, making the system vulnerable to contamination.

12.4. Potential Contamination

The potential for contamination is significant and grows as the population increases. While the rainwater itself is largely pollution free, when it rains general environmental toxics may seep downward into the ground water. These toxics include human wastes from septic tanks, animal wastes and agricultural products. With increased population, and autos on Majuro there is growing concern about fluids like fuel, oil, battery acid, power steering and brake fluids, and mercury being dumped or leaking onto the ground, and ultimately ending up in the water supply.

Although beyond the scope of this engagement, the occasion of water borne illnesses seems to be significant. While most of the commercial establishments provide their own on site pressurization, the potential for contaminants entering the customer environment is otherwise high.

12.5. Demand Management

Since supply is dependent on weather and other factors largely outside the control of the utility, attention should be focused on demand management as well as on supply enhancement. This will certainly involve an educational campaign to help residents understand why conservation is important.

12.6. Wastewater System

Wastewater is collected from the eastern end of Majuro via a series of six small pumping stations and discharged via an 8 inch pipeline into the outer reef along the southern shore of Majuro at a depth of approximately sixty feet. This discharge depth and the nature of the prevailing ocean current aid in dilution of the wastewater and carrying it out to sea.

12.7. Finances

The MWSC appears to suffer significant under funding from rates. In FY2004 the income from the combined Majuro Water and Sewer Co. was $1,116,000 and expenses were $1,231,000 for a net loss of approximately $115,000, or about ten percent of revenues.

12.8. Management Structure

For many years Billy Roberts has functioned as the General Manager of the Majuro Water and Sewer Company, at the request of President Note of the RMI. This is in addition to his duties as the General Manager for the Marshalls Energy Company. This system has allowed for leadership beyond what would likely be available in a General Manager for the Water and Sewer Company alone.

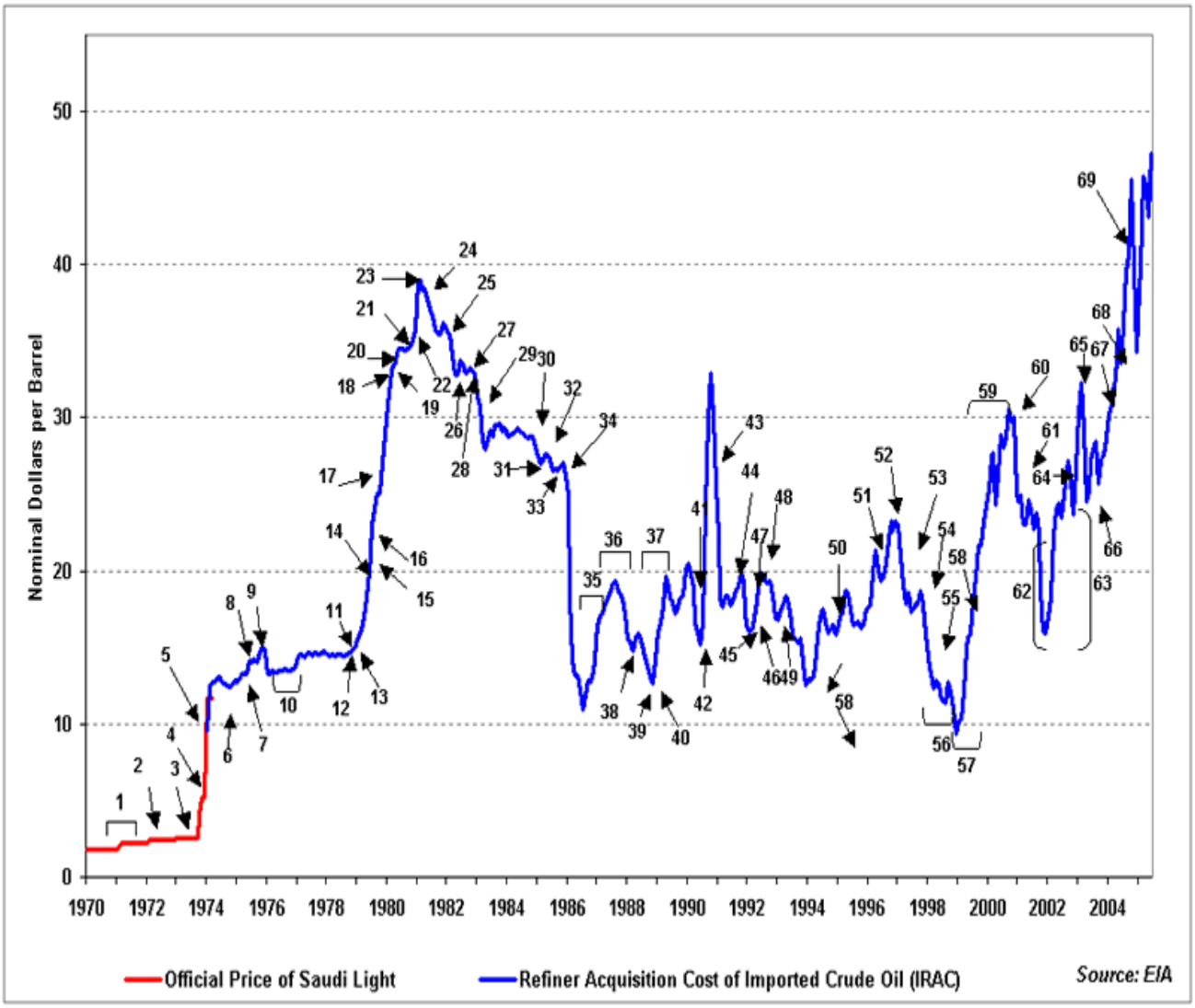
Maintaining such an amalgamated management is sensible and leads to the question of additional efficiencies that might be gained by a similar arrangement within the utility as a whole.

12.9. Potential Efficiencies

Personnel, technology systems and equipment all appear to be ripe for the economy of scale and cross training savings that would result from joint operations with the Energy Company. While this arrangement would initially be far more favorable to MSWC than to MEC, conscientious oversight on the part of management should strike a balance over time.

13. EXHIBITS

13.1. World Nominal Oil Price Chronology: 1970-2005

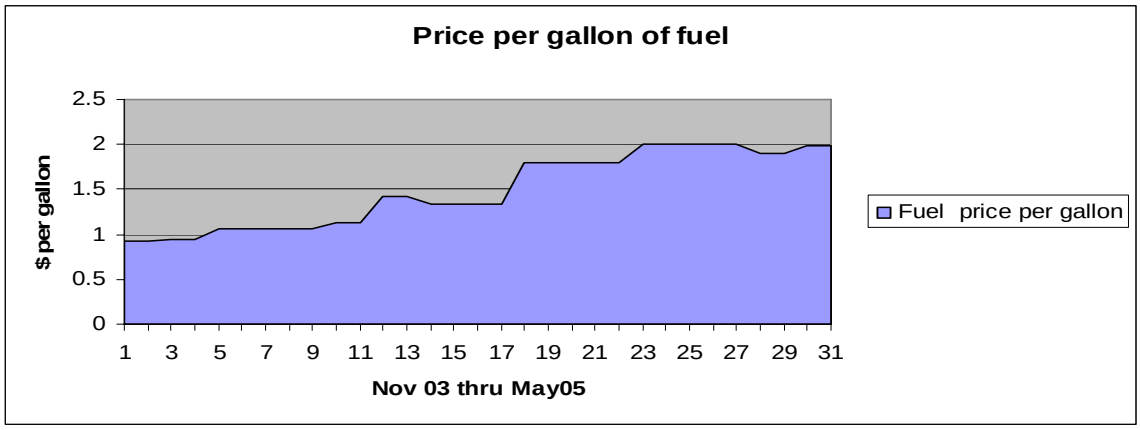


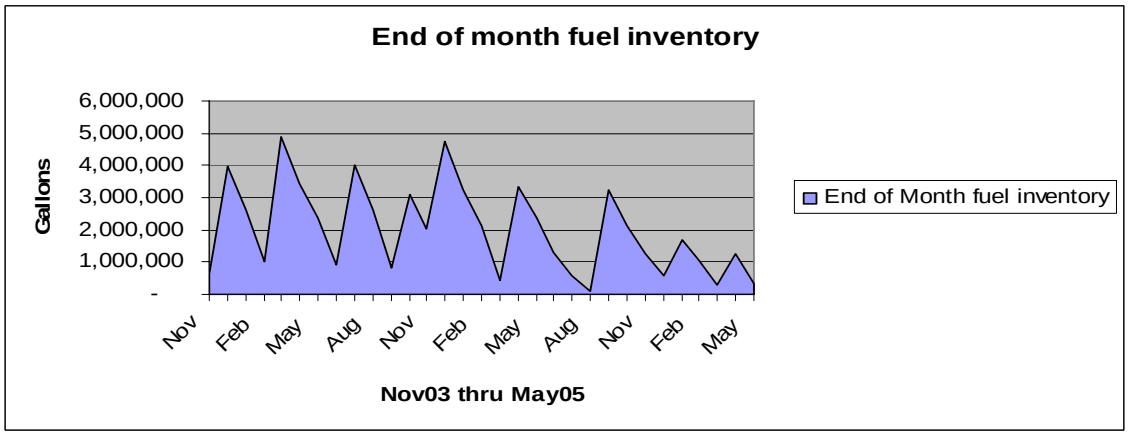
13.2. Marshall Islands Generation Facilities

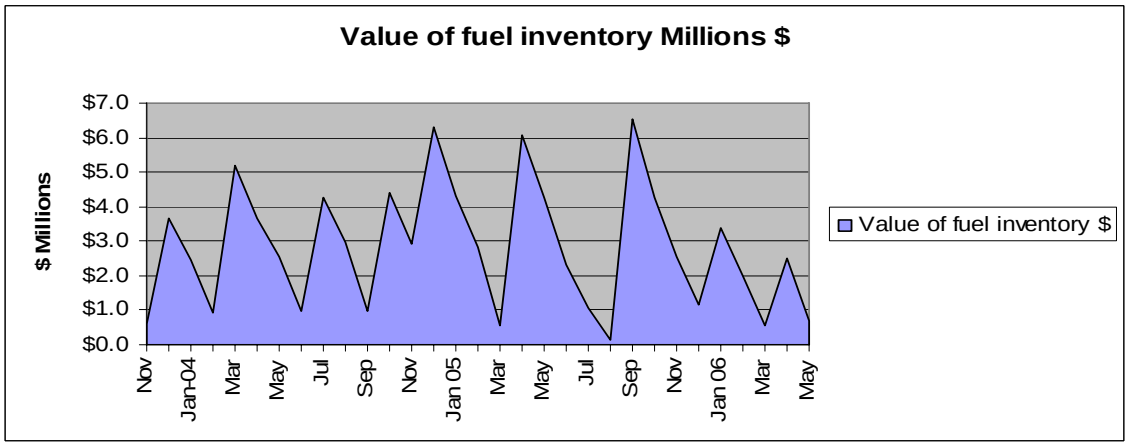
Majuro Station # 1				
Unit	Size	Manufacture	Year Installed	Status
Unit #1	3.2 MW	Peilstik	1978	2.5 MW downgraded
Unit #2	3.2 MW	Peilstik	1978	Out of Service
Unit #3	3.2 MW	Peilstik	1978	Out of Service
Unit #4	3.2 MW	Peilstik	1978	Out of Service
Unit #5	3.0 MW	Caterpillar	1992	Operational
3.2 mw units down	rated to 2.5 mw			
Majuro Station # 2				
Unit #6	6.4 MW	Deutz	1999	Operational
Unit #7	6.4 MW	Deutz	1999	Operational
Rongrong Island Station				
Unit #1	60 kW	N/A	N/A	Operational[1]
Unit #2	60 kW	N/A	N/A	Operational[1]
Wotje Atoll Station				
Unit #1	275 kW	Wartsila	N/A	Operational[2]
Unit #2	275 kW	Wartsila	N/A	Operational[2]
Jaluit Atoll Station				
Unit #1	275 kW	N/A	N/A	Operational
Unit #2	275 kW	N/A	N/A	Operational
Kili Island Station				
Unit #1	688 kW	Caterpillar3508	N/A	Operational
Unit #2	688 kW	Caterpillar3508	N/A	Operational
Unit #3	681 kW	Caterpillar3412	N/A	Operational
Rongalap Atoll Station				
Unit #1	1,000 kW	Caterpillar	N/A	NonOperating[3]
Ebeye Island Station				
Unit #1	2.6 MW	Enterprise	N/A	Oper-unknown
Unit #2	800 kW	Caterpillar	N/A	Oper-unknown
Unit #3	1,000 kW	Cummins	2000	Operational
Unit #4	1,000 kW	Cummins	2000	Operational
Unit #5	1,000 kW	Cummins	2000	Non-operation
Unit #6	1,000 kW	Cummins	2000	Non-operation
Bikini Atoll Station 1				
Unit #1	256 kW	Caterpillar	N/A	Operational
Unit #2	256 kW	Caterpillar	N/A	Operational
Unit #3	219 kW	Caterpillar	N/A	Operational
Eniwetak Atoll Station				
Unit #1	60 kW	Unknown	N/A	Part time oper.

13.3. Fuel Prices, Inventory Volumes & Values 2003-2005

Fuel Prices Nov03 thru May05
End of month Fuel Inventory Nov03 thru May05
Value of Fuel Inventory Nov03 thru May05



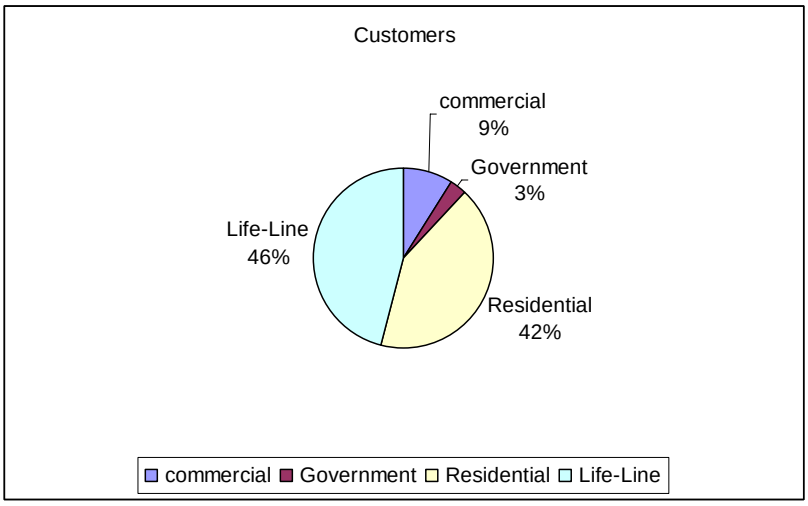


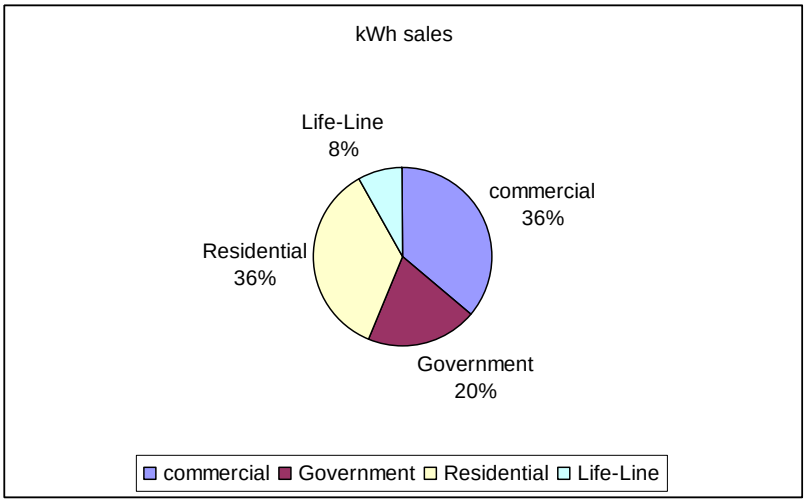


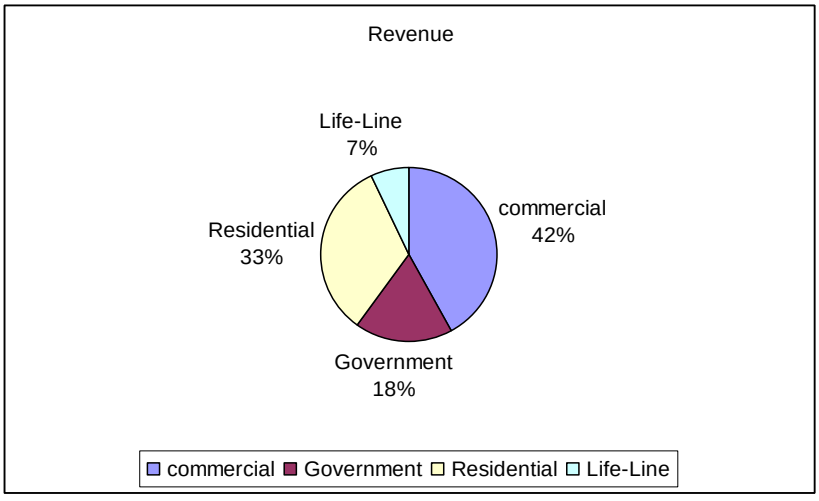
13.4. MEC FUEL PURCHASES 2003 to JUNE 2006

Fuel Loads Purchased				
Date	Vol	Supplier	Ship	
Dec-03	4,258,459	MOMI	MT Achilleus	2 to 3 Dec 03
Mar-04	5,133,625	MOMI	MT Achilleus	6 to 7 Mar 04
Jul-04	4,180,903	MOMI	MT Iver Explorer	10 to 11 Jul 04
Oct-04	3,830,154	MOMI	Hatasia	8 to 9 Oct 04
Dec-04	4,033,378	MOMI	MT Ocean Marlin	26 to 27 Dec 04
Apr-05	4,016,607	MOMI		
Sep-05	3,860,583	MOMI		
Apr-06	1,583,972	SKN		
Apr-06	1,603,168	SKN		
Jun-06	1,730,829	SKN		

13.5. MEC CUSTOMER MIX – NUMBER OF CUSTOMERS; ENERGY USE & REVENUES







13.6. MEC PROFIT AND LOSS STATEMENTS 2000 - 2005

	2000	2001	2002	2003	2004	2005
Kwh Billed		53794474	58097649	62104600		
Revenue	$6,986,742	$7,237,341	$8,289,970	$8,872,780	$8,619,539	$9,712,058
Cost of power	$5,042,095	$6,477,095	$5,722,555	$7,192,439	$7,907,035	$11,178,752
Dist. Oper.	$1,156,628	$1,330,730	$748,373	$1,083,620	$1,003,522	$977,161
Depr & Amort.	$801,693	$1,006,721	$997,333	$1,020,586	$1,084,201	$1,089,242
Amort. Only(est)	$450,000	$450,000	$450,000	$450,000	$458,581	$488,981
Admin & Gen	$931,631	$925,236	$1,033,773	$1,231,636	$1,259,536	$1,461,846
Taxes	$142,484	$153,639	$160,058	$188,505	$226,151	$240,290
Dist. Maint.	$78,087	$88,603	$144,371	$141,539	$93,807	$101,530
Consumer Acts	$248,269	$0	$329,532	$282,463	$274,237	$71,053
MEC Expenses	$8,400,887	$9,982,024	$9,135,995	$11,140,788	$11,848,489	$15,119,874
Operating Expense +RUS Loan Prin & Int..	$8,577,741	$10,724,006	$9,900,645	$11,810,131	$12,485,006	$15,625,989
Operating. Loss	($1,414,145)	($2,744,683)	($846,025)	($2,268,008)	($3,228,950)	($5,407,816)
Interest expense	($528,547)	($741,982)	($764,650)	($669,343)	($636,517)	($506,115)
Operating deficiency	($1,942,692)	($3,486,665)	($1,610,675)	($2,937,351)	($3,865,467)	($5,913,931)
Elec. System						

MEC PROFIT AND LOSS STATEMENTS FOR 2000 THRU 2005 (con't)

Operating deficiency	($1,942,692)	($3,486,665)	($1,610,675)	($2,937,351)	($3,865,467)	($5,913,931)
Elec. System						
	2000	2001	2002	2003	2004	2005
MEC FUEL OPERATIONS						
NonOperating Inc						
Fuel and gas sales	$7,323,031	$6,122,021	$7,660,469	$9,341,838	$11,505,967	$14,062,333
Cost of sales	($6,132,297)	($4,723,555)	($5,530,080)	($7,384,111)	($9,655,826)	($11,864,242)
Gross Profit-Fuel	$1,190,734	$1,398,466	$2,130,389	$1,957,727	$1,850,141	$2,198,091
MEC Operating loss	($223,411)	($1,346,217)	$1,284,364	($310,281)	($1,378,809)	($3,209,725)
with fuel sales profits						
Compact funding	$0	$0	$1,866,667	$1,866,667	$0	$0
Interest expense			($764,650)	($669,343)	($636,616)	($606,213)
Other, net	$826,472	$516,761	($310,287)	($290,455)	$0	$250,000
Total non-oper inc	$2,017,206	$1,915,227	$791,730	$906,869	($636,616)	($356,213)
Capital contributions					$173,994	$400,000
Tot other income	$826,472	$516,761	$1,556,380	$1,576,212	$173,994	$650,000
w/o int exp						
Other -	$93,488	$93,488				
Change in net assets	$168,002	-$1,477,950	$2,076,094	$596,588	-$1,841,431	-$3,165,938
Net assets@begin yr			$3,127,406	$5,203,500	$5,800,088	$3,958,657
Net Assets@end yr			$5,203,500	$5,800,088	$3,958,657	$792,719
Electric Revenues	$6,986,742	$7,237,341	$8,289,970	$8,872,780	$8,619,539	$9,712,058
Electric Cash Expense	$8,577,741	$10,724,006	$9,900,645	$11,810,131	$12,485,006	$15,625,989
Electric Net	($1,590,999)	($3,486,665)	($1,610,675)	($2,937,351)	($3,865,467)	($5,913,931)
Profit from Fuel	$1,190,734	$1,398,466	$2,130,389	$1,957,727	$1,850,141	$2,198,091
Other incomes/expense	$826,472	$516,761	$1,556,380	$1,576,212	$173,994	$650,000
Net other income	$2,017,206	$1,915,227	$3,686,769	$3,533,939	$2,024,135	$2,848,091
Net Elect + other income	$426,207	($1,571,438)	$2,076,094	$596,588	($1,841,332)	($3,065,840)

13.7. MEC Debts, Short Term

Bank of Guam Loan

3-Mar-06

				prin	int	# pmnts
$1,600,000	Drawn on March 10, 2006			$1,600,000	0.0083	36
$400,000	Drawn on June 6, 2006			$400,000	0.0083	36
$2,000,000	Total					
3	Years Term					Monthly pmnt
						Months
As of Aug 23, 2006						Tot. Pmnt

Prin	Int - Daily					
Date	days	Cum Int	Daily Int	Drawdowns	Repaymnts	Balance
23-Aug-06		$74,075	$462			$1,622,575
24-Aug-06		$74,519	$445			$1,623,019
25-Aug-06		$74,519	$445			$1,623,464

Mobil Oil Loan Sept, 2005 Orig. $9.3M reduced to $7.8 wo taxes, inflated margin.

	Principal	Interest	# pmnts
New note on April 28, 2006	$7,800,000	0.18	24
Was $5,755,000, had to pay $200,000 on 4/28/06			
			Monthly pmnt
			Months
			Tot. Pmnt
6	$200,000	per mo for six months	
18	$322,000	per mo for next 18 months	

Principal	IDaily					
Date	days	Cum Int	Daily Interest	Draw downs	Repaymnts	Balance
31-Aug-06	126	$786,358	$2,607		$200,000	$5,089,970
1-Sep-06	127	$788,868	$2,510			$5,092,480
2-Sep-06	126					$5,094,992

13.8. Terms of Reference

Performance Audit and Review -- Marshalls Energy Company

The Government of the Republic of the Marshall Islands (GRMI) intends on to conducting a performance audit of the Marshalls Energy Company (MEC) in order to identify options for its future structure and operation.

The GRMI is keen to identify the appropriate size and structure of MEC including what services it would provide in order to offer the most beneficial outcome for the GRMI. This should include consideration of MEC's optimal size covering full range of options from focusing on electrical generation and/or distribution in Majuro to the possibility of encompassing other areas of utility provision such as electricity generation and distribution in other geographical areas in RMI (Ebeye and Outer Islands), fuel storage and distribution, water and sewerage, alternative energies and possibly solid waste management.

The criteria in deciding the appropriate size and scope for MEC will be based on providing an acceptable and affordable level of service to the public while maximizing operating efficiency and minimizing the financial impact on the GRMI. Hence the full range of options in private-public cooperation and collaboration should be considered.

The review will:

Identify appropriate performance indicators for a utility of MEC's size and structure operating in the market environment that exists in RMI.

Review MEC's operation over the past 5 years to assess its performance against these performance indicators.

In undertaking the review, consideration should be given to the ownership structure (i.e. government ownership) of MEC and the various implications this has for its overall operation;

Analyze the appropriateness of the current structure of MEC and its components including, but not limited to, its fuel sales operations and its involvement in alternative energy.

Analyze the most appropriate scope, size and structure of MEC, considering the other utility operations including water and sewerage, waste disposal, fuel wholesaling, etc in order to achieve appropriate economies of scale and maximize the efficiency of these operations and minimize the financial impact on the GRMI.

Identify options for public-private cooperation, including strategic alliances, joint ventures, etc. with key stakeholders, in undertaking MEC's services in the future.

Make recommendations about the most appropriate size and structure of MEC considering all options from being scaled down to focus on its core service—electricity generation and/or distribution in Majuro, or expanded to become a "super-utility" to incorporate other electrical generation/distribution in other urban and rural areas, fuel storage and distribution, alternative energies, water and sewerage, (etc.).

Identify a plan of action by which MEC could move towards the recommended option in an appropriate time-frame.

14. Appendix I - Abbreviations

ABBREVIATIONS

BOG	Bank of Guam
BBL	Barrel
DUD	Delap-Uliga-Darrit
FFB	Federal Financing Bank
GRT	Gross Receipts Tax
KADA	Kwajalein Atoll Development Authority
KADA	Kwajalein Atoll Local Government
KAJUR	Kwajalein Atoll Joint Utility Resources
MD&A	Management's Discussion and Analysis
MEC	Marshalls Energy Company
MOCR	Maintenance, operations and capital replacement
MOMI	Mobil Oil Micronesia Incorporated
MOPS	Mean of Platts Singapore Pricing
MWSC	Majuro Water and Sewer Corporation
PPA	Pacific Power Association
RFP	Request for Proposal
RMI	Republic of the Marshall Islands
RUS	Rural Utility Service