UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(mark one)

___ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d)OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 1997

OR

X TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)OF THE SECURITIES EXCHANGE ACT OF 1934 (NO FEE REQUIRED)

For the transition period from to

Commission file number 0-22418

ITRON, INC.
(Exact name of registrant as specified in its charter)

| Washington | 91-1011792 |
|---|---|
| (State of Incorporation) | (I.R.S. Employer Identification Number) |

2818 North Sullivan Road
Spokane, Washington 99216-1897
(509) 924-9900

(Address and telephone number of registrant's principal executive offices)

Indicate by check mark whether the registrant(1) has filed all reports required to be filed by Section 13 or 15(d)of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes__X___ No_____

As of October 31, 1997, there were outstanding 14,600,037 shares of the registrant's common stock, no par value, which is the only class of common or voting stock of the registrant.

ITRON, INC.

INDEX

Part 1: Financial Information

Item 1: Financial Statements

ITRON, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited, in thousands, except per share data)

| | Three months ended Sept. 30, | | Nine months ended Sept.30, | |
|---|---|---|---|---|
| | 1997 | 1996 | 1997 | 1996 |
| Revenues | | | | |
| AMR systems | $38,751 | $28,195 | $96,655 | $97,800 |
| Handheld systems | 12,689 | 10,406 | 35,714 | 34,266 |
| Outsourcing | 6,987 | 142 | 19,373 | 2,924 |
| Total revenues | 58,427 | 38,743 | 151,742 | 134,990 |
| Cost of sales and services | | | | |
| AMR systems | 21,522 | 17,951 | 56,375 | 56,450 |
| Handheld systems | 9,322 | 6,153 | 25,392 | 19,426 |
| Outsourcing | 5,483 | 73 | 14,965 | 2,052 |
| Total cost of sales and services | 36,327 | 24,177 | 96,732 | 77,928 |
| Gross profit | 22,100 | 14,566 | 55,010 | 57,062 |
| Operating expenses | | | | |
| Sales and marketing | 6,800 | 7,511 | 21,385 | 20,673 |
| Product development | 8,079 | 10,351 | 23,481 | 25,412 |
| General and administrative | 2,867 | 2,705 | 8,568 | 8,153 |
| Amortization of intangibles | 534 | 392 | 1,611 | 1,086 |
| Total operating expenses | 18,280 | 20,959 | 55,045 | 55,324 |
| Operating income (loss) | 3,820 | (6,393) | (35) | 1,738 |
| Interest and other, net | (1,172) | (283) | (3,561) | (1) |
| Income (loss) before income taxes | 2,648 | (6,676) | (3,596) | 1,737 |
| Benefit (provision) for income taxes | (1,005) | 2,130 | 1,305 | (900) |
| Net income (loss) | $ 1,643 | $ (4,546) | $(2,291) | $ 837 |
| Net income (loss) per share | $ 0.11 | $ (0.34) | $ (0.16) | $ 0.06 |

The accompanying notes are an integral part of these financial statements.

ITRON, INC.
CONSOLIDATED BALANCE SHEETS
(Unaudited, in thousands)

| | September 30, 1997 | December 31, 1996 |
|---|---|---|
| Assets | | |
| Current assets | | |
| Cash and cash equivalents | $ 5,036 | $ 2,243 |
| Accounts receivable, net | 51,852 | 44,376 |
| Inventories | 31,380 | 33,837 |
| Deferred income taxes, net | 5,478 | 4,171 |
| Other | 2,815 | 6,116 |
| Total current assets | 96,561 | 90,743 |
| Property and equipment, net | 50,060 | 51,699 |
| Equipment used in outsourcing, net | 38,210 | 19,650 |
| Intangible assets, net | 21,000 | 23,344 |
| Long-term contracts receivable | 16,833 | 1,187 |
| Other | 1,707 | 798 |
| Total assets | $ 224,371 | $ 187,421 |
| Liabilities and shareholders' equity | | |
| Current liabilities | | |
| Bank line of credit | $ - | $ 33,062 |
| Accounts payable and accrued expenses | 31,182 | 24,675 |
| Deferred revenue | 5,960 | 6,767 |
| Total current liabilities | 37,142 | 64,504 |
| Mortgage notes payable | 6,440 | 6,440 |
| Subordinated notes payable | 61,357 | - |
| Project financing | 1,486 | - |
| Warranty and other obligations | 1,398 | 2,255 |
| Total noncurrent liabilities | 70,681 | 8,695 |
| Shareholders' equity | | |
| Common stock | 103,433 | 98,686 |
| Retained earnings | 13,014 | 15,305 |
| Other | 101 | 231 |
| Total shareholders' equity | 116,548 | 114,222 |
| Total liabilities and shareholders' equity | $ 224,371 | $ 187,421 |

The accompanying notes are an integral part of these financial statements.

ITRON, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in thousands)

| | Nine months ended Sept. 30, 1997 | 1996 |
|---|---|---|
| OPERATING ACTIVITIES | | |
| Net income (loss) | $ (2,291) | $ 837 |
| Noncash charges (credits) to income: | | |
| Depreciation and amortization | 12,887 | 7,450 |
| Deferred income taxes | (1,288) | (1,204) |
| Changes in operating accounts: | | |
| Accounts receivable | (7,476) | (6,836) |
| Inventories | 2,457 | (19,899) |
| Accounts payable and accrued expenses | 2,734 | 2,899 |
| Long-term contracts receivable | (15,646) | (586) |
| Deferred revenue | (807) | (4,234) |
| Other, net | 6,177 | (2,072) |
| Cash used by operating activities | (3,253) | (23,645) |
| INVESTING ACTIVITIES | | |
| Short-term investments | - | 25,074 |
| Acquisition of property, plant and equipment | (7,863) | (24,954) |
| Equipment used in outsourcing | (22,308) | (6,331) |
| Proceeds from sale of outsourcing equipment | 3,035 | - |
| Other, net | (1,256) | (4,502) |
| Cash used by investing activities | (28,392) | (10,713) |
| FINANCING ACTIVITIES | | |
| Change in bank line of credit, net | (33,062) | 25,511 |
| Mortgage notes payable | - | 840 |
| Borrowings under subordinated debt, net | 61,515 | - |
| Project financing | 1,486 | - |
| Issuance of common stock | 4,556 | 3,056 |
| Other, net | (57) | 43 |
| Cash provided by financing activities | 34,438 | 29,450 |
| Increase (decrease) in cash and cash equivalents | 2,793 | (4,908) |
| Cash and cash equivalents at beginning of period | 2,243 | 6,473 |
| Cash and cash equivalents at end of period | $ 5,036 | $ 1,565 |

The accompanying notes are an integral part of these financial statements.

ITRON, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
SEPTEMBER 30, 1997

Note 1: Basis of Presentation

The consolidated financial statements presented in this Form 10-Q are unaudited and reflect, in the opinion of management, all normal recurring adjustments necessary for a fair presentation of operations for the three and nine month periods ended September 30, 1997. Certain information and footnote disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles have been condensed or omitted pursuant to the rules and regulations of the Securities and Exchange Commission. These condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and the notes thereto included in the Company's Form 10-K for the year ended December 31, 1996, as filed with the Securities and Exchange Commission on March 5, 1997.

The Company reports revenue in three categories: AMR (automatic meter reading) systems, Handheld systems (EMR or electronic meter reading), and Outsourcing. AMR and Handheld systems revenues include all product and other revenue associated with each business segment. Outsourcing includes revenues for contracts under which the Company installs, owns, and operates an AMR system to provide automated meter reading services over a period of time, typically 15 years.

The results of operations for the three and nine month periods ended September 30, 1997, are not necessarily indicative of the results expected for the full fiscal year or for any other fiscal period.

Note 2: Balance Sheet Components

| Inventories (unaudited, in thousands): | September 30, 1997 | December 31, 1996 |
|---|---|---|
| Material | $ 16,514 | $ 22,687 |
| Work in process | 3,830 | 1,570 |
| Finished goods | 9,802 | 9,047 |
| Total manufacturing inventories | 30,146 | 33,304 |
| Service | 1,234 | 533 |
| Total inventories | $ 31,380 | $ 33,837 |

Item 2:MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND

RESULTS OF OPERATIONS

RESULTS OF OPERATIONS

The following table summarizes the major components of operating income for the nine months ended September 30, 1997 and 1996, and changes between those two periods:

| | Percentage of Total Revenue | | Percentage |
|---|---|---|---|
| Nine months ended September 30, | 1997 | 1996 | Change |
| Revenues | | | |
| AMR systems | 64% | 73% | (1%) |
| Handheld systems | 23% | 25% | 4% |
| Outsourcing | 13% | 2% | 563% |
| Total revenues | 100% | 100% | 12% |
| Cost of sales and services | | | |
| AMR systems | 58% | 58% | - |
| Handheld systems | 71% | 57% | 31% |
| Outsourcing | 77% | 70% | 629% |
| Total cost of sales and services | 64% | 58% | 24% |
| Gross profit | 36% | 42% | (4%) |
| Operating expenses | | | |
| Sales and marketing | 14% | 15% | 3% |
| Product development | 15% | 19% | (8%) |
| General and administrative | 6% | 6% | 5% |
| Amortization of intangibles | 1% | 1% | 48% |
| Total operating expenses | 36% | 41% | (1%) |
| Operating income | 0% | 1% | (102)% |

Revenues

The Company's total revenues increased $19.7 million, or 51%, to $58.4 million in the third quarter of 1997 from $38.7 million in the third quarter of 1996. For the nine-month period ended September 30, 1997, total revenues were $151.7 million compared to $135.0 million in the same period one year ago.

AMR systems revenues were higher for the quarter ended September 30, 1997 compared to the comparable quarter in 1996 by $10.6 million. For the nine-month period ended September 30, AMR revenues were $1.1 million lower in 1997 than in 1996.. The increased revenues in the quarter resulted primarily from increased meter module shipments related to new contracts announced during the first half of 1997 and a change in the mix of meter module shipments. For the 1997 nine month period, slightly lower volumes of meter module shipments were partially offset by AMR software systems revenues from the Company's UTS subsidiary. The majority of these increased software systems revenues were related to initial revenue from large power billing systems and work performed under the Independent Systems Operator (ISO) contract in California. Although average selling prices for meter modules decreased slightly in the 1997 periods compared to the 1996 periods, the effect of that decrease was not material.

The Company expects that AMR sales will grow in the future and that a portion of that growth will be from sales of telephone-based AMR meter modules, sales of UTS's large power billing systems and additional ISO contracts which UTS hopes to obtain. However, much of the expected growth in AMR continues to be dependent upon the timing and resolution of mergers and acquisitions in the utility industry, industry regulatory reform issues in the United States, development of international markets, and various other factors.

Handheld Systems revenues increased $2.3 million, or 22%, to $12.7 million in the current quarter from the same quarter in 1996. On a year to date basis, Handheld Systems revenues of $35.7 million were $1.4 million, or 4%, higher than the year to date period ended September 30, 1996. The increased 1997 revenues were mainly due to international shipments of the Company's latest handheld computer, the Genesis Portable Computer ("GPC"), to a South Korean utility. The Company expects that Handheld Systems revenues may decline as a percentage of total revenues over time as utilities adopt more advanced meter reading technologies. In recent years, the Company's Handheld Systems revenues have been driven by sales to new customers internationally and by upgrade and replacement sales domestically, and the Company expects this trend to continue in the future.

Outsourcing revenues were $7.0 million and $19.4 million for the three and nine month periods ended September 30, 1997, respectively, compared to $142,000 and $2.9 million in the same periods in 1996. The Company currently has two outsourcing contracts from which it is generating revenues. Outsourcing revenues in 1997 were derived primarily from the Company's largest outsourcing contract, which is with the Duquesne Light Company ("Duquesne"). During the third quarter, the Company signed an amendment to its contract with Duquesne. The amended contract revised completion dates for a number of critical contract milestones. As in the original contract, the amended agreement provides for certain one-time monetary penalties for failure to meet certain specified milestones, including three milestones that must be met in the next eight months. The total amount of these penalties, should the Company fail to meet every one of the specified critical milestones is approximately $25 million. The Company is currently in compliance with its agreement with Duquesne and believes it will fully satisfy all future milestones. (For additional information see "Amended Duquesne Agreement" filed as an exhibit with this 10-Q and "Description of Business -- Certain Risk Factors -- Dependence on the Installation, Operations and Maintenance of AMR Systems Pursuant to Outsourcing Contracts" in the Company's most recent Annual Report on Form 10-K.)

Outsourcing revenues are expected to stay at the same level experienced in the current period through the remainder of the year. The Company expects outsourcing revenues to decline in 1998 both as a percentage of total revenues and in absolute dollars. The Company recognizes revenue for outsourcing agreements using the cost-to-cost, percentage-of-completion method of accounting for long-term contracts. Under this method, revenue is recognized proportionately as project costs are incurred. Revenue recognition in any given period is equal to: (a) the ratio of actual costs incurred during the period to total projected costs over the life of the contract; multiplied by (b) the total amount of minimum contractually committed revenue to be received over the entire contract term if the minimum level of services required under the contract are performed.. Estimates of future costs are reviewed quarterly. To the extent actual revenues or actual costs, or the timing of those revenues or costs, differ from projected revenues and costs, outsourcing revenues and margins could be affected. In general, during the beginning of an outsourcing contract, services are performed and expenses incurred at a greater rate than in the later part of the contract. After the initial installation of project assets, customer invoicing usually remains constant throughout the term of the contract. The resulting excess of revenue over invoicing is reflected on the Company's balance sheet as a Long-Term Contract Receivable. As work on an outsourcing contract progresses, expenses are incurred at a lesser rate, resulting in recognized revenue which is less than the invoiced amount, which causes a decrease in the Long-Term Contract Receivable.

Gross Profit

Gross margins of 38% of revenues for the current quarter were equal to the 1996 third quarter. Overall gross margins for the nine month period ended September 30, 1997 were 36% compared to gross margins of 42% in the same period in 1996. The lower profit margins result primarily from a higher portion of revenues coming from the Company's contract with Duquesne, lower margins on International Handheld System sales, and excess manufacturing capacity.

Year to date AMR systems gross margins were 42% for both 1997 and 1996.

Handheld systems gross margins declined from 43% of revenues in the 1996 nine month period to 29% in the comparable 1997 period. The decline in margins was largely a result of a shift in mix to international sales. International handheld sales have historically been at lower margins than domestic due to volume pricing and lower software license content. In addition, replacement and upgrade business, which is increasingly becoming a more significant share of the Company's domestic handheld systems business, has traditionally been discounted from new handheld systems sales.

Outsourcing gross margins were 23% and 30% of revenues for the nine month periods ended September 30, 1997 and 1996, respectively. The primary source of outsourcing revenues in the 1997 period results from the Company's contract with Duquesne. The lower margins on this contract reflect the early stages of the Company's fixed network product which has not yet benefited from any substantial cost reduction programs, and the fact that this is the Company's first large scale, fixed network installation.

The Company's overall gross profit may be affected in the future by competitive pricing pressure, the ability to utilize existing manufacturing capacity, the mix and volumes of meter modules shipped, the risks inherent in cost estimation for outsourcing contracts, and other factors.

Operating Expenses

Sales and marketing expenses of $6.8 million for the three month period ended September 30, 1997, decreased 9% from the comparable period in 1996 and also decreased slightly as a percentage of revenue from 15% in the third quarter of 1996 to 14% in the current quarter. For the year to date period ended September 30, 1997, sales and marketing expenses were $21.4 million compared to $20.7 million for the same period in 1996, reflecting a 3% increase. The higher expenses were primarily for consulting services and incentive compensation. The Company expects that sales and marketing expenses will remain at approximately 13% to 14% of total revenues for the remainder of the year.

Product development expenses of $8.1 million in the current quarter decreased $2.3 million, or 22%, from the comparable quarter in 1996, and decreased as a percentage of revenues from 27% to 14%. For the year to date period ended September 30, 1997, product development expenses of $23.5 million were down almost $2 million from $25.4 million in the same period in 1996. The decreases for both the quarter and year to date periods were primarily due to non-recurring materials charges of approximately $2.1 million in the third quarter of 1996. These materials charges resulted from design improvements to both the Company's Fixed Network Cell Control Units and new handheld computer, the GPC. The Company expects that 1997 product development expenses will remain at approximately 15% to 16% of total revenues for the remainder of the year.

General and administrative expenses of $2.9 million in the three months ended September 30, 1997, increased $162,000, or 6%, over the third quarter of 1996, but decreased as a percentage of total revenues from 7% to 5%. For the year to date period, general and administrative expenses increased $415,000, or 5%, over the comparable 1996 period, yet remained level as a percentage of revenues. The increase for both the quarter and year to date periods was due to several factors including acquisition costs for DCI, the Company's subsidiary that is responsible for telephone-based AMR systems for electric meters, DCI administrative expenses, and incentive compensation expenses. General and administrative expenses are expected to remain at approximately 5% to 6% of total revenues in the foreseeable future.

Amortization of intangibles increased $142,000 and $525,000 in the three and nine month periods ended September 30, 1997, respectively, over the same periods in 1996, yet remained at 1% of total revenues. The increased expenses were due to amortization of patents and licenses acquired during the last half of 1996.

Interest and Other, Net

The Company had net interest and other expense in 1997 of $1.2 million for the third quarter and $3.6 million year to date. Interest expense during the quarter and year to date periods was reduced by $110,000 and $517,000, respectively, for capitalized interest related to outsourcing installations. Interest expense in the 1997 periods was incurred primarily in connection with the Company's 6 3/4% Convertible Subordinated Notes ("the Notes") and by borrowings under the Company's bank line of credit. Interest expense was partially offset by interest income on the investment of a portion of the net proceeds from the Notes. The Company completed a $63.4 million (including over-allotment option) private placement of the Notes in March and April of 1997. In the 1996 third quarter and year to date periods, the Company had net interest expense of $283,000 and $1,000, respectively, from interest related to borrowings under the Company's bank line of credit.

Income Taxes

The Company had an income tax benefit of 36% of pre-tax earnings for the nine months ended September 30, 1997 compared to an income tax provision of 52% for the same period in 1996. The higher 1996 tax rate is attributable primarily to the UTS acquisition. The acquisition resulted in a one-time recognition of taxable income due to an accounting method change and higher state taxes. Additionally, the Company will benefit from higher research and development credits in 1997 compared to 1996 as a result of the credit's extension to cover all of the 1997 tax year. To the extent pre-tax earnings, or the components of those earnings, differ from expectations, the effective tax rate for the year could change from the current year-to-date rate.

FINANCIAL CONDITION

Operating activities used $3.3 million in cash during the first nine months of 1997 compared to using $23.6 million during the same nine month period one year ago. The decreased cash used in operating activities resulted to a large degree from reductions in inventory balances during 1997 from year-end levels. Inventory levels have steadily decreased since the Company has been in the process of implementing a "build to order" production schedule since the fourth quarter of 1996. During the first three quarters of 1996, the Company was substantially operating under a "build to expectation" production schedule. Accounts receivable balances have increased from the year-end level due to the higher level of revenues along with the timing of revenues within the current comparative quarter. The Company's Long-Term Contracts Receivable balance, which represents the amount of outsourcing revenues earned but not yet billed, increased $15.6 million during the nine months ended September 30, 1997. The Company expects Long-Term Contracts Receivable may increase by approximately $5 million more at year end.

The Company invested $28.4 million of cash in the first nine months of 1997, compared to $10.7 million in the comparable period in 1996. The lower investment level in the 1996 year-to-date period was the result of liquidating $25.1 million in short-term investments. Cash was invested in the first nine months of 1997 to fund $7.9 million of property and equipment additions and $22.3 million of product costs for the Company's outsourcing installations. In the first nine months of 1996, the Company invested $25.0 million in property and equipment, the majority of which was for equipment to expand production capacity at both of the Company's principal manufacturing locations. The Company also invested $6.3 million in outsourcing installations and $4.0 million for acquisitions of intellectual property rights in the 1996 period. Itron anticipates spending cash on product costs for the Company's outsourcing installations at a substantially reduced rate during the remainder of 1997. 1997 property and equipment additions for the Company are expected to be less than half of the 1996 level.

Financing activities in the first nine months of 1997 generated $34.4 million in cash. The Company received $61.5 million in net proceeds from the Note offering in March and April of 1997, which were used to pay off the Company's bank line of credit, and to fund operations. During the second quarter of 1997, the Company closed an $8 million, long-term, fixed rate project financing facility for an outsourcing agreement and has received $1.5 million of the funds to date. . The Company generated $29.5 million in cash in the comparable nine months of 1996, primarily from borrowings under the Company's bank line of credit.

Existing sources of liquidity at September 30, 1997 include approximately $5.0 million of existing cash and cash equivalents and $50 million of available borrowings under the Company's bank line of credit agreement. This agreement expires on May 31, 1998 at which time the Company intends to renew it. Itron expects to have some cash requirements during the remainder of the year for existing outsourcing installations and intends to seek project financing for future outsourcing agreements. The Company believes that existing cash and available borrowings are sufficient to fund operations for the next twelve months.

Certain Forward-Looking Statements

When included in this Quarterly Report on Form 10-Q, the words "expects," "intends," "anticipates," "plans," "projects" and "estimates," and analogous or similar expressions are intended to identify forward-looking statements. Such statements, which include, but are not limited to, statements contained in "Management's Discussion and Analysis of Financial Condition and Results of Operations" are inherently subject to a variety of risks and uncertainties that could cause actual results to differ materially from those reflected in such forward-looking statements. Such risks and uncertainties include, among others, changes in the utility regulatory environment, delays or difficulties in introducing new products, increased competition and various other matters, many of which are beyond the Company's control. These and other risks are described in more detail in "Description of Business --Certain Risk Factors" in the Company's most recent Annual Report on Form 10-K, and such description is hereby incorporated herein by reference. These forward-looking statements speak only as of the date of this report. The Company expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statement contained herein to reflect any change on the Company's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

## Part 2: Other Information

### Item 1: Legal Proceedings

On October 3, 1996, Itron filed a patent infringement suit against CellNet Data Systems ("CellNet") in the United States District Court for the District of Minnesota, alleging that CellNet is infringing on the Company's United States Patent No. 5,553,094, entitled "Radio Communication Network for Remote Data Generating Stations," issued on September 3, 1996. The Company is seeking injunctive relief as well as monetary damages, costs and attorneys' fees. The discovery phase of this lawsuit has commenced. There can be no assurance that the Company will prevail in this action or, even if it does prevail, that the legal costs incurred by the Company in connection therewith will not have a material adverse effect on the Company's financial condition.

On April 29, 1997, Itron was served by CellNet with a complaint alleging patent infringement. The suit is pending in the United States District Court for the Northern District of California. Itron's management has reviewed the complaint and believes it to be without merit. The patent in question was issued in 1988. Itron's management is unaware of any previous assertion by CellNet of any claim of patent infringement by Itron. Itron intends to vigorously defend this suit. The complaint seeks injunctive relief as well as monetary damages, costs and attorneys' fees.

On May 29, 1997, Itron and its President and Chief Executive Officer, Johnny M. Humphreys, were served with a complaint alleging securities fraud filed by Mark G. Epstein (Epstein v Itron, et al.) on his own behalf and alleged to be on behalf of a class of all others similarly situated, in the U.S. District Court for the Eastern District of Washington (Civil Action No. CS-97-214 RHW). The complaint alleges, among other matters, that Itron and Mr. Humphreys violated Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder by making allegedly false statements regarding the development status, performance and technological capabilities of Itron's Fixed Network automatic meter reading ("AMR") system and regarding the suitability of Itron's encoder receiver transmitter devices for use with an advanced Fixed Network AMR system. The complaint seeks monetary damages, costs and attorneys' fees and unspecified equitable or injunctive relief. On July 28, 1997, the Company and Mr. Humphreys filed a motion to dismiss the complaint for failure to state a claim for relief. On October 26, 1997 a hearing was held on the motion to dismiss, at which time the court took the motion under advisement. The Company believes it has good defenses to the claims alleged and intends to defend itself vigorously in this action.

On September 3, 1997, Itron and Mr. Humphreys agreed to accept service of process of a complaint which was filed in the Superior Court of the State of Washington, County of Spokane, (Civil Action No. 97204889-8) against the Company, its President and Chief Executive Officer, Johnny M. Humphreys, Itron Board Chairman Paul A. Redmond, Itron Director Jon E. Eliassen, and Washington Water Power Company. The complaint, filed by plaintiff Katya M. Haub, purports to be brought on behalf of herself and a class of all others similarly situated. The class period alleged is identical to that alleged in a previously-filed proposed class action (Epstein v. Itron, et al.) filed in the United States District Court for the Eastern District of Washington at Spokane. The complaint alleges, among other matters, that the defendants are liable for claims made under the Washington State Securities Act, the Washington State Consumer Protection Act, and the common law of negligent misrepresentation and seeks monetary damages, costs, attorneys' fees and equitable or injunctive relief. The complaint generally alleges that the defendants were responsible for materially incorrect statements about Itron's business, markets, and future prospects including allegedly misleading statements with respect to the development and deployment of Itron's Fixed Network system. The Company has filed a motion to stay. A hearing on this motion was held on October 31, 1997, at which time the court issued a temporary stay pending determination of the Company's motion to dismiss in the Epstein case, and took the motion under advisement. The Company believes it has good defenses to the claims alleged, and intends to defend itself vigorously against this action.

Item 6: Exhibits and Reports on Form 8-K

a) Exhibits

Exhibit 10 -Amendment No. 1 to Amended and Restated Utility Automated Meter Data Acquisition Lease and Services Agreement between the Registrant and Duquesne Light Company dated September 11, 1997. (Confidential treatment requested for a portion of this contract)

Exhibit 11 - Statement re Computation of Earnings per Share

Exhibit 27 - Financial Data Schedule

b) Reports on Form 8-K

One report on Form 8-K, dated September 3, 1997, was filed during the quarter ended September 30, 1997, pursuant to Item 5 of that form. The report related to a class action lawsuit filed against the Company.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Commission Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ITRON, INC.
(Registrant)

By: /s/ DAVID G. REMINGTON
David G. Remington
Vice President and
Chief Financial Officer
(Authorized Officer and Principal Financial Officer)

Date: November 14, 1997

ITRON, INC.
STATEMENT RE COMPUTATION OF EARNINGS PER SHARE
(Unaudited, shares in thousands)

| Primary Shares (Based on Average Price): | Three months ended September 30, 1997 | Three months ended September 30, 1996 | Nine months ended September 30. 1997 | Nine months ended September 30. 1996 |
|---|---|---|---|---|
| Weighted average number of common shares outstanding | 14,470 | 13,336 | 13,959 | 13,274 |
| Dilutive effect of outstanding stock options and warrants | 504 | | | 835 |
| Primary weighted average shares outstanding | 14,974 | 13,963 | 13,959 | 14,109 |

| Fully Diluted Shares (Based on Ending Price): | Three months ended September 30, 1997 | Three months ended September 30, 1996 | Nine months ended September 30. 1997 | Nine months ended September 30. 1996 |
|---|---|---|---|---|
| Weighted average number of common shares outstanding | 14,470 | 13,336 | 13,959 | 13,274 |
| Dilutive effect of outstanding stock options and warrants | 516 | | | 835 |
| Fully diluted weighted average shares outstanding | 14,986 | 13,855 | 13,959 | 13,826 |

```
9-MOS
       DEC-31-1997
            SEP-30-1997
                        5,036
                      0
                  52,591
                    (739)
                    31,380
               96,561
                         126,538
               (38,268)
                224,371
          37,142
                            0
               0
                         0
                       103,433
                         101
116,548
                        151,742
              151,742
                           96,732
                  96,732
               55,045
                 (35)
            (3,561)
               (3,596)
                   1,305
           (2,291)
                     0
                    0
                           0
                  (2,291)
                   (.16)
                   (.16)
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EXHIBIT 10

To

ITRON, INC.'S

QUARTERLY REPORT

for the Quarter Ended September 30, 1997

On

Form 10-Q

" * " = omitted, confidential material, which material has been separately filed with the Securities and Exchange Commission pursuant to a request for confidential treatment.

AMENDMENT NO. 1
TO
AMENDED AND RESTATED UTILITY
AUTOMATED METER DATA ACQUISITION
EQUIPMENT LEASE AND SERVICES AGREEMENT

THIS AMENDMENT NO. 1 TO AMENDED AND RESTATED UTILITY AUTOMATED METER DATA ACQUISITION EQUIPMENT LEASE AND SERVICES AGREEMENT (this "Amendment") is entered into and effective as of the 11th day of September, 1997, by and between Duquesne Light Company, a Pennsylvania corporation with its principal office located in Pittsburgh, Pennsylvania ("Duquesne"), and Itron, Inc., a Washington corporation with its principal office located in Spokane, Washington ("Contractor"). (Duquesne and Contractor being sometimes referred to herein individually as a "Party" and together as "Parties").

WITNESSETH:

WHEREAS, Duquesne and Contractor are parties to an Amended and Restated Utility Automated Meter Data Acquisition Equipment Lease and Services Agreement entered into and effective as of and including January 15, 1996 (the "Agreement"); and

WHEREAS, the Parties have mutually agreed to amend the Agreement to the extent and in the manner provided in this Amendment.

NOW, THEREFORE, in consideration of the premises and the mutual agreements hereinafter set forth, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the Parties hereby agree as follows:

1. The definition of "Certified" or Certify" in Section 1.1 of the Agreement is hereby amended to delete the word "Owner" in the last line and replace it with the word "Duquesne."
2. The definition of "Competitor" in Section 1.1 of the Agreement is hereby deleted in its entirety and replaced with the following:

"Competitor" means any Person engaged in the *

3. The definition of "Contractor Intellectual Property" in Section 1.1 of the Agreement is hereby amended to delete the words "during the Term" in the eleventh and twelfth lines and replace them with the words "after the Effective Date".
4. The definition of "Data" in Section 1.1 of the Agreement is hereby deleted in its entirety and replaced with the following:

"Data" means all of the meter readings and other data and information of any kind generated by or transmitted via the Meters, Meter Modules or the UTS MV-90 Translation System (to the extent such system generates and/or transmits information, and derivatives thereof, obtained from the Meters, Meter Modules or any other Duquesne owned and/or controlled input source) pursuant to the terms of this Agreement, including but not limited to outage and tampering reports, time-of-day information, on demand and appointment readings, information concerning unauthorized usage of inactive accounts, load profiles, and other data to be delivered to Duquesne in accordance with this Agreement. *

5. The definition of "Duquesne Intellectual Property" in Section 1.1 of the Agreement is hereby amended to delete the words "during the Term" in the ninth line and replace them with the words "after the Effective Date".
6. Section 1.1 of the Agreement is hereby amended to add the following definition of "Fixed Network Build Out" after the definition of Fixed Network":

"Fixed Network Build Out" has the meaning set forth in Section 4.16.

7. The definition of "New Meters" in Section 1.1 of the Agreement is hereby deleted in its entirety and replaced with the following:

"New Meters" means all Single-Phase Meters and Three-Phase Meters supplied by Contractor and installed by Contractor (in the case of Single-Phase Meters (other than Transformer-Rated Meters)) or Duquesne (in the case of Transformer-Rated Meters and Three-Phase Meters) in Duquesne's service territory from time to time, and all Single-Phase Meters (other than Transformer-Rated Meters) installed or held in inventory by Contractor, and all Three-Phase Meters and all Transformer-Rated Meters held in inventory by Contractor, pursuant to this Agreement or in connection with its performance under this Agreement (including, in either case, any such meters that are included in the Equipment leased to Duquesne under the Equipment Lease).

8. Section 1.1 is hereby amended to add the following definition of "Single-Phase Meters" after the definition of "Significant Milestone":

"Single-Phase Meters" means single-phase meters for the measurement of electric power usage, including but not limited to Transformer-Rated Meters.

9. Section 1.1 of the Agreement is hereby amended to add the following definition of "Transformer-Rated Meters" after the definition of "Three-Phase Meters":

"Transformer-Rated Meters" means single-phase transformer-rated ABB PowerPlus Alpha Meters, or any alternative single-phase transformer-rated meters acceptable to Duquesne.

10. Section 3.5 of the Agreement is hereby deleted in its entirety and replaced with the following: "Section 3.5 Phase I. The Phase I period shall commence on the Effective Date hereof and extend through the date on which (i) all Milestones have been met which, in accordance with Schedule J, are to be met prior to the commencement of Phase II, (ii) billing data for at least 100,000 Single-Phase Meters has been delivered to the customer billing interface through the Fixed Network, (iii) Contractor's portion of the customer billing interface has been tested and accepted by Duquesne in accordance with the mutually agreed test plan, and (iv) Duquesne shall have notified Contractor pursuant to Section 4.6(a)(1) that Acceptance of such Work has occurred."

11. Section 3.6 of the Agreement is hereby deleted in its entirety and replaced with the following: "Section 3.6 Phase II. The Phase II period shall commence at the end of Phase I and extend through the date on which (i) the Parties have mutually agreed upon a test plan concerning the Acceptance of Phase II pursuant to Schedule F, (ii) all Milestones have been met which, in accordance with Schedule J, are to be met prior to the commencement of Phase III, and (iii) Duquesne shall have notified Contractor pursuant to Section 4.6(b)(1) that Acceptance of all Phase II Work has occurred."

12. Section 3.8(d) of the Agreement is hereby deleted in its entirety and replaced with the following:

"(d) Contractor is not required to add Meter Modules to Three-Phase Meters."
13. Sections 3.9(b), (c) and (d) of the Agreement are hereby deleted in their entirety and replaced with the following:

"(b) Maintenance, Repair, Retirement and Replacement of Meters, Three-Phase Meters and Transformer-Rated Meters. Contractor shall be responsible for all maintenance and repair of Single-Phase Meters (other than Transformer-Rated Meters) necessary in order to comply with all Applicable Law and the terms of this Agreement. In addition, Contractor shall maintain the Single-Phase Meters (other than Transformer-Rated Meters) or any additions or replacements therefor so that such Single-Phase Meters (other than Transformer-Rated Meters) perform during the Term in accordance with the applicable specifications in effect as of the Effective Date (as they may be amended from time to time). Contractor shall remove from service any Retained Meter which ceases to meet the meter specifications identified in Schedule A at any time during the Term and shall replace it with a

New Meter (Single-Phase Meter) and Meter Module. Contractor shall continue to buy and own New Meters (and lease them to Duquesne pursuant to the Equipment Lease) as necessary to timely meet Contractor's obligations hereunder. Duquesne shall be responsible for the installation of and repairs to all Transformer-Rated Meters and Three-Phase Meters, and, for each Transformer-Rated Meter installed by Duquesne (and any future replacement thereof, if any), Contractor shall make a one-time payment to Duquesne of

* as compensation for Duquesne's installation and maintenance of such Meter during the Term. Such payment by Contractor shall be made in immediately available funds within thirty (30) days after receipt of Duquesne's quarterly invoice for each such Meter installed during the preceding calendar quarter. Except as otherwise specifically provided in this Article III with respect to purchasing, owning, leasing and reading Transformer-Rated Meters and Three-Phase Meters, Contractor shall have no liability or obligation with respect to such Transformer-Rated Meters or Three-Phase Meters, and shall be excused from any failure to perform the Work with respect thereto if and to the extent that they are not in proper working order.

(c) Forecasted Meter Growth. Contractor shall, upon notice from Duquesne in accordance with Schedule A, install additional New Meters which are Single-Phase Meters (other than Transformer-Rated Meters), and supply additional New Meters which are Transformer-Rated Meters or Three-Phase Meters throughout the term with no increase to the Price set forth on Schedule D, provided only that Duquesne does not request installations of additional New Meters which are Single-Phase Meters (other than Transformer-Rated Meters) in any period that exceeds the number of meters by type (i.e., single phase KWH or single phase demand) as shown through that period in the respective columns of the table attached as Schedule H; and Duquesne does not request Contractor to supply additional New Meters which are Transformer-Rated Meters or Three-Phase Meters with an actual cost (including the cost of Meter Modules) in excess of

* per year, provided that any amount not expended in a given year shall be carried over and added to the amounts available for subsequent years, and, any amount so carried over and remaining at the end of the Term shall promptly be reimbursed and paid over to Duquesne.

(d) Unanticipated Meter Growth. If Duquesne requests the installation of additional New Meters which are Single-Phase Meters in any period that results in totals exceeding the number of meters by type (i.e., single phase KWH or single phase demand) shown through that period in the respective columns of the table attached as Schedule H, or if Duquesne requests the supply of additional New Meters which are Transformer-Rated Meters or Three-Phase Meters in any period with a cost (including the cost of Meter Modules) of more than * per year, then Contractor shall so notify Duquesne. If Duquesne elects to proceed with the installations or supply, it shall do so through the issuance of a Change Order Notice in accordance with Section 4.8."

14. Section 3.12 of the Agreement is hereby amended by deleting the words "the Term" from the first line and replacing them with the words "Phase III".
15. Section 4.3 of the Agreement is hereby deleted in its entirety and replaced with the following: "Section 4.3 Milestone Schedule and Delay Liquidated Damages.

    (a) Contractor shall perform the Work and install the Equipment (other than Transformer-Rated Meters and Three-Phase Meters, the installation of which shall be Duquesne's responsibility) consistent with and in accordance with the Milestone Schedule attached hereto as Schedule J, subject to any extensions to such Milestones as may be provided in this Agreement. TIME IS OF THE ESSENCE IN THE PERFORMANCE OF THIS AGREEMENT.

    (b) If Contractor fails to meet any General Milestone, then the payment due from Duquesne on the invoice for the month in which that General Milestone was missed, if any, shall be reduced by a "holdback" of

    * of that total invoice. The "holdback amount" shall be due and payable, together with Duquesne's regular monthly payment, in the month following the month in which such General Milestone is actually achieved. Nothing in this Section 4.3(b) shall affect Duquesne's right to dispute in good faith the amount of any invoice.

    (c) If Contractor fails to meet any General Milestone, as such General Milestone may be extended hereunder, then Contractor shall, within

    * of such General Milestone, submit a corrective action plan to Duquesne detailing how it will improve its progress. The plan may include, without limitation, an increase in Contractor's labor force, an increase in the number of shifts worked, overtime, additional days of work per week or similar measures, all without additional cost to Duquesne. Duquesne agrees that, at Contractor's option, Duquesne will work with Contractor to assist in developing a plan to improve its progress and to meet future Milestones.

    (d)

    (i) If Contractor fails to meet any Significant Milestone, as identified in Schedule J, as such Milestone may be extended hereunder, then Contractor shall, within

    * of such Milestone, (y) submit a corrective

action plan like that described in Section 4.3(c) and (z) pay to Duquesne the sum of * as a one-time Delay Liquidated Damages payment for failure to meet said Milestone. Such Delay Liquidated Damages shall be due and payable for each Significant Milestone that is not met, but shall be paid only one time with respect to each such Milestone.

(ii) Provided that Contractor has made payment of the Delay Liquidated Damages due with respect to any delayed Significant Milestone, then when that Milestone is completed, each subsequent Significant and General Milestone will be extended by the same time period as the period of delay suffered by the delayed Significant Milestone, but the Critical Milestone dates will remain unchanged.

(iii) If Contractor meets Critical Milestone Number 29 ("Fixed Network Functionality Operational-Including Applicable Schedule A Interfaces ( * of Single-Phase Accounts on Fixed Network, Daily Reads, Billed From Fixed Network)") on or before the scheduled date, Duquesne will reimburse Contractor in the amount of * of all Delay Liquidated Damages that were paid by Contractor with respect to delays in the Significant Milestones.

(e)

(i) If Contractor fails to meet Critical Milestone Number 29 ("Fixed Network Functionality Operational-Including Applicable Schedule A Interfaces ( * of Single-Phase Accounts on Fixed Network, Daily Reads, Billed From Fixed Network)"), as identified in Schedule J, then Duquesne shall be entitled to an immediate payment of five million dollars ($5,000,000) from Contractor as Delay Liquidated Damages, and, at Duquesne's option (exercised by notice to Contractor at any time before Contractor meets Milestone Number 29), one of the following:

(a) a payment of an additional five million dollars ($5,000,000) from Contractor as Delay Liquidated Damages, in which event the failure to meet Milestone Number 29 shall not constitute a Default; or

(b) a right to declare a Default by Contractor under Section 16.2 hereof and terminate this Agreement in accordance with Articles XVII (including but not limited to the right to be paid the five million dollars ($5,000,000) of liquidated damages set forth in Section 18.3(b)(1)) and XVIII.

Duquesne shall be entitled to draw upon the Performance Bond maintained in accordance with Section 6.1 hereof to satisfy all or any part of Contractor's foregoing obligations to Duquesne.

(ii) For the purpose of this Section 4.3(e), Critical Milestone Number 29 is defined as completion of (x) the installation of Meter Modules on one hundred percent (100%) of all Single-Phase Meters (excluding Transformer-Rated Meters in the event Duquesne exercises its option in Section 4.3(e)(iv)(a) for Contractor to purchase certain ABB Alpha Meters and further exercises its option in Section 4.3(e)(iv)(a) to be responsible for the installation and maintenance of such ABB Alpha Meters) subject to any excused exceptions provided by the terms of Schedule A, Section 3.4, with respect to the number of attempts required to gain access to each Existing Meter, (y) the connection of at least * of those Meters to the Fixed Network (with billing data delivered to the customer billing interface via the Fixed Network), and (z) the installation of the "Network Software" and "Network Applications" as defined in Schedule A (per the table concerning AIBs set forth therein) and Schedule B, and satisfaction of certain testing and verification standards to be developed pursuant to Schedule F during Phase II. Contractor shall deliver a notice to Duquesne certifying that it has completed Milestone Number 29 on a particular date, and Duquesne shall promptly conduct such testing and inspections as are necessary to verify that the Milestone has been completed. In the event that during the course of this testing and inspection Duquesne finds that Contractor failed to meet Critical Milestone Number 29 as defined above, Contractor shall be required to proceed immediately in accordance with the terms of Section 4.3(e)(i) as if it had originally failed to meet that Milestone; provided, however, that if the particular failure to meet Critical Milestone Number 29 is a minor and

inadvertent Nonconformity or variance from its requirements, of which Contractor had no knowledge at the time of its Certification that the Milestone had been met, then Contractor shall have the right for * following notification of the Nonconformity or variance to Correct it before Contractor can be required to proceed under Section 4.3(e)(i).

(iii) If Contractor fails to meet Significant Milestone Number 27 ("Complete System Support for Single Phase and Shared Line Three-Phase ABB Alpha Meters Installed by Duquesne including Communications Links and Required Interfaces (excluding * Accounts) as Defined in Schedule A"), as identified in Schedule J, then Contractor shall immediately pay to Duquesne the amount of five million dollars ($5,000,000) as Delay Liquidated Damages. If Duquesne does not receive the payment, Duquesne may immediately draw upon the Performance Bond maintained in accordance with Section 6.1 hereof.

(iv) If Contractor fails to meet Critical Milestone Number 23 ("Genesis Fixed Network Version 2.5 Software Installed and Operational ( * Accounts on Fixed Network, Daily Reads, All Applications Functioning)"), as identified in Schedule J, then Duquesne shall be entitled to an immediate payment of five million dollars ($5,000,000) from Contractor as Delay Liquidated Damages, and, at Duquesne's option (exercised by notice to Contractor at any time before Contractor meets Milestone Number 23), one of the following:

(a) the purchase (and lease to Duquesne under the Equipment Lease at no additional cost or charge to Duquesne), installation and maintenance by Contractor of ABB Alpha meters on all remaining (less than * ) single-phase demand accounts in lieu of * hardware, in which event the failure to meet Milestone Number 23 shall not constitute a Default; provided however, if Duquesne intends to exercise this option, it must do so within * of Contractor's failure to meet Critical Milestone Number 23, and further provided that if Duquesne exercises this option, Duquesne shall have the option (which it will exercise with reasonable promptness) to be responsible for the installation and maintenance of such ABB Alpha Meters to the same extent that Duquesne has such responsibility for Transformer-Rated Meters pursuant to Section 3.9(b), in which case Contractor will pay to Duquesne * for each such ABB Alpha Meter installed by Duquesne to the same extent and on the same terms as Contractor is to pay Duquesne for Transformer-Rated Meters pursuant to Section 3.9(b); or

(b) a payment of an additional five million dollars ($5,000,000) from Contractor as Delay Liquidated Damages, in which event the failure to meet Milestone Number 23 shall not constitute a Default; or

(c) a right to declare a Default by Contractor under Section 16.2 hereof and terminate this Agreement in accordance with Articles XVII (including but not limited to the right to be paid the five million dollars ($5,000,000) of liquidated damages set forth in Section 18.3(b)(i)) and XVIII.

Duquesne shall be entitled to draw upon the Performance Bond maintained in accordance with Section 6.1 hereof to satisfy all or any part of Contractor's foregoing obligations to Duquesne. Contractor shall deliver a notice to Duquesne certifying that it has completed Milestone Number 23 on a particular date, and Duquesne shall promptly conduct such testing and inspections as are necessary to verify that the Milestone has been completed. In the event that during the course of this testing and inspection Duquesne finds that Contractor failed to meet Critical Milestone Number 23 as defined above, Contractor shall be required to proceed immediately in accordance with the terms of Section 4.3(e)(iv) as if it had originally failed to meet that Milestone; provided, however, that if the particular failure to meet Critical Milestone Number 23 is a minor and inadvertent Nonconformity or variance from its requirements, of which Contractor had no knowledge at the time of its Certification that the Milestone had been met, then Contractor shall have the right for * following notification of the Nonconformity or

variance to Correct it before Contractor can be required to proceed under Section 4.3(e)(iv).

(v) If Contractor fails to meet any of Phase III Milestones 33 through and including 37, the Base Price for Services payable by Duquesne in Phase III (as shown on Schedule D) shall be reduced by * (which shall not be cumulative with respect to Contractor's failure to meet multiple Milestones) until such time as such Milestone (and any other of such Milestones which continue to not be met) has been met, and Contractor shall not be entitled to recover such * from Duquesne. Nothing in this Section 4.3(e)(v) shall affect Duquesne's right to dispute in good faith the amount of any invoice."

16. Section 4.6(a) of the Agreement is hereby deleted in its entirety and replaced with the following:

"(a) Phase I. Upon Contractor's completion of all Milestones on Schedule J which are to be completed prior to the commencement of Phase II, Contractor shall notify Duquesne that all required Work under Phase I has been installed and/or performed and is complete, fully operational and ready for final Acceptance of Phase I. Duquesne shall, within thirty (30) days from the date of such notice, conduct the Phase I Acceptance Testing in accordance with Section 4.5 and Schedule F hereto, and shall notify Contractor that (1) the Work meets the requirements of this Agreement ("Acceptance" of Phase I) or (2) the Work or parts thereof do not conform to this Agreement, in which case Contractor shall Correct the Nonconformity. If Duquesne's Acceptance of Phase I does not occur on or before October 1, 1997, Duquesne shall exercise one of its options set forth in Section 17.2. The exercise by Duquesne of any such option shall not be deemed a waiver of any Nonconformity. Acceptance by Duquesne shall not waive any of Duquesne's rights and remedies under this Agreement or relieve Contractor from any of Contractor's duties and obligations."

17. Section 4.7 of the Agreement is hereby deleted in its entirety and replaced with the following: "Section 4.7 Weekly Reporting. During Phase II and the Fixed Network Build Out in Phase III (if elected), Contractor shall, on a weekly basis, provide a report to Duquesne pursuant to Section 10.2 showing the status of all Nonconformities. Except as set forth in the preceding sentence, standard reporting of the status of Nonconformities shall be monthly in Phase III.

18. Section 4.13(a) of the Agreement is hereby amended to replace the reference to "Section 16.2(h)" in the fourteenth (14th) line with a reference to "Section 16.2(g)."
19. Section 4.13(b) of the Agreement is hereby amended to delete the words "four (4)" each place they appear.

20. Section 4.16 of the Agreement is hereby deleted in its entirety and replaced with the following:

"Section 4.16 Fixed Network Build Out. If elected by Duquesne at its sole option by written notice to Contractor after * and before * , not later than * , Contractor will meet Milestone Number 38 ("Fixed Network Build Out Completed (covering * of customers in Service Area)"), and will do all Work necessary to extend the Automated Services provided under the Fixed Network from the * level required to Complete Phase II to a * level, for * (the "Fixed Network Build Out"). In the event Contractor does not complete such expansion by * , the one-time penalty of * for missing a Significant Milestone shall be imposed and paid by Contractor; provided, however, as provided in Schedule L, the Performance Guarantees and "performance assessments" will be adjusted to reflect the Fixed Network Build Out. Nothing in this Section 4.16 shall affect Duquesne's right to dispute in good faith the amount of any invoice."

21. Section 6.1(a) of the Agreement is hereby deleted in its entirety and replaced with the following: "(a) Phase II. Contractor shall, within * of the commencement of Phase II, furnish or replace, as appropriate, and at all times throughout the remainder of Phase II maintain, a Performance Bond (including a replacement for any Performance Bond drawn or called upon by Duquesne in accordance with the terms of this Agreement, as long as there continues to be Phase II obligations of Contractor to Duquesne hereunder) containing the terms and conditions set forth in Section 6.2 in the amount of * as security for Contractor's faithful performance during Phase II of this Agreement, including its obligations to meet the Milestones or to pay appropriate liquidated damages for failure to do so."

22. Section 6.2(b) of the Agreement is hereby amended to add the following after the words "Performance Bond" at the end of that Section and before the period::

"; provided, however, such Performance Bond may contain such different and/or additional provisions as Duquesne may agree upon in writing."

23. Section 12.6 of the Agreement is hereby amended to delete the words "Promptly after the execution hereof" in the first and second lines and replace them with the words "On or before October 15, 1997".

24. Section 15.2(b)(iii) of the Agreement is hereby amended to delete the sentence which begins "In addition to the selection of the remedies set forth in . . ." in its entirety and replace it with the following:

"In addition to the selection of the remedies set forth in Section 15.2(b)(i), (ii) or (iii), Duquesne may in its sole discretion require Contractor to provide, at Contractor's expense, a Performance Bond in an amount and form acceptable to Duquesne (and which may or may not meet any or all of the requirements of Article VI, at Duquesne's option) to secure Contractor's obligations to Correct the work."

25. Section 16.2(g)(i) of the Agreement is hereby amended by deleting the words "four (4)" in the third line.

26. Section 16.2(b) of the Agreement is hereby amended by adding the words "during Phase III" in the third line after the words "(based on actual data)".

27. Section 16.2(c) of the Agreement is hereby amended by adding the words "during Phase III" in the third line after the words "(based on actual data)".

28. Sections 16.2(d) and (e) of the Agreement are hereby deleted in their entirety and replaced with the following:

"(d) Either:

(i) Contractor fails to complete Milestone Number 23 of Schedule J within the time period provided therefor in Schedule J, and Duquesne exercises its option in Section 4.3(e)(iv)(c) to declare such failure an Event of Default; or

(ii) Contractor fails to complete Milestone Number 29 of Schedule J within the time period provided therefor in Schedule J, and Duquesne exercises its option in Section 4.3(e)(i)(b) to declare such failure an Event of Default;

(iii) Contractor fails to pay when due any liquidated damages that become due and payable with respect to a delay in completion of any of the Milestones in Schedule J.

(e) Contractor's abandonment of any material part of the Work at any time."

29. Section 17.1(a) of the Agreement is hereby deleted in its entirety and replaced with the following:

"(a) Initial Term. The initial Term of this Agreement shall be for a period beginning with the commencement of Phase II (the "Term Commencement Date") and ending fifteen (15) years after the date on which the Acceptance of Phase II occurs, which period may be extended pursuant to Section 17.1(b) below."

30. Section 17.2 of the Agreement is hereby deleted in its entirety and replaced with the following: "Section 17.2 Termination Prior to Acceptance of Phase I. If Acceptance of Phase I does not occur on or before October 1, 1997 in accordance with Section 4.6(a), then Duquesne must, prior to its Acceptance of Phase I, either (x) terminate this Agreement or (y) enter into negotiations with Contractor in an attempt to mutually agree upon an extension to Phase I, appropriate revisions to Schedule J and other appropriate Changes, if any; if such negotiations do not lead to agreement within a period of time acceptable to Duquesne, then Duquesne shall terminate this Agreement. Following termination pursuant to this Section 17.2, the Parties' rights to the Equipment shall be as set forth in Section 18.2."

31. Section 18.2 of the Agreement is hereby deleted in its entirety and replaced with the following: "Section 18.2 Termination Prior to Acceptance of Phase I. In the event of a termination pursuant to Section 17.2, Contractor shall transfer ownership of the New Meters that were installed during Phase I to Duquesne, in which case any Meter Modules attached to such New Meters shall be deemed abandoned in place by Contractor at no cost to Duquesne, and such Meter Modules may not be used by Duquesne for any purpose. Duquesne may, at its option, elect to purchase from Contractor the Meter Modules that would otherwise be abandoned under the terms of this Section 18.2, together with the related Meters and all mobile automated meter reading equipment (excluding any Fixed Network components) necessary to utilize the Meter Modules for billing purposes, at a price of * per unit, upon Contractor's then-standard terms and conditions for equipment sales (for purposes of Section 12.3, "Duquesne's Buyout"). Duquesne may, at its option, elect to purchase all other Fixed Network components at Contractor's * plus Contractor's

*

."

32. Section 18.3(b)(i) of the Agreement is hereby deleted in its entirety and replaced with the following:

"(i) Contractor shall immediately pay to Duquesne five million dollars ($5,000,000) as liquidated damages for Contractor's Event of Default (unless Contractor has already made such payment, or Duquesne has already received payment under the Performance Bond, pursuant to Section 17.3(b)), which obligation may be satisfied by Duquesne's draw down on the Performance Bond maintained by Contractor pursuant to Section 6.1(a) hereof."

33. Section 18.7(b) of the Agreement is hereby amended to add at the end of such Section the following sentence:

"In such event, Duquesne shall assume, and Contractor shall assign, all of Contractor's rights and obligations under any third party pole,

tower or facility rental and lease agreements which Duquesne, in its sole discretion, finds acceptable to it."

34. Section 21.2(a) of the Agreement is hereby amended to delete the words "during Phase II" from the first line.
35. Schedules A, D, E, F, H, I, J and L to the Agreement are hereby deleted in their entirety and replaced, respectively, with Replacement Schedules A, D, E, F, H, I, J and L attached to this Amendment.
36. Schedule B to the Agreement is hereby amended by adding thereto the provisions set forth on the Addendum to Schedule B attached to this Amendment.
37. Except as expressly amended by this Amendment, the Agreement and each and every representation, warranty, covenant, term and condition therein are hereby specifically ratified and confirmed.
38. Except as specifically addressed in this Amendment, by executing and delivering this Amendment, Duquesne has not waived or released any claim, right or remedy available to it under the Agreement.
39. This Amendment shall be governed by the laws of the Commonwealth of Pennsylvania (without giving effect to the principles thereof relating to conflicts of laws).
40. This Amendment may be executed and delivered in two or more counterparts, each of which shall be treated as an original but which, when taken together, shall constitute one and the same instrument, and may be delivered by facsimile transmission.

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IN WITNESS WHEREOF, the Parties have caused this Amendment No. 1 to Amended and Restated Utility Automated Meter Data Acquisition Equipment Lease and Services Agreement to be signed by their duly authorized representatives as of the date first written above.

DUQUESNE LIGHT COMPANY

By: /s/_____
Name: David D. Marshall
Title: President and Chief Executive Officer

ITRON, INC.

By: /s/_____
Name: LeRoy D. Nosbaum
Title: Vice President and General Manager,
Network Systems

BA973140.009
(amend1)

SCHEDULE A

DESCRIPTION OF WORK

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# 1. INTRODUCTION

Duquesne is committed to the implementation of new systems and technologies that are available in the marketplace and which shall contribute to the Company's goal of becoming a leader in the electric utility industry. To that end, the Company has been exploring various alternatives to bring new automated data acquisition services to its service area that efficiently provide accurate information for billing and outage management purposes while opening new opportunities for the delivery of new products and services.

After considerable review, an RF spread spectrum fixed network application has been selected as the system that can best provide basic services while permitting maximum flexibility for expansion into other functional uses. This technology has gained broader acceptance throughout the public utility industry as increasing numbers of systems are initiated and become operational. Duquesne has selected this type of system as the most appropriate approach to meet its long term needs for expanding customer oriented services while providing higher levels of customer satisfaction.

## 1.1 Background

Duquesne is an electric utility with headquarters in the City of Pittsburgh, Pennsylvania, providing electric service to approximately 600,000 customers within a service area of 800 square miles located primarily in Allegheny and Beaver Counties in Southwestern Pennsylvania.

Electric customers are billed on a monthly basis and customers' meters are scheduled for monthly meter reading. All meter reading is currently done manually utilizing The Contractor's handheld datacaps with the Premierplus software platform. Duquesne intends to improve its customer service operations by installing a strategic automated solution. Duquesne has determined that the pursuit of automatic meter reading to its fullest advantage can best be achieved by entering a long term service agreement to provide and deliver meter data and other automated services.

## 1.2 Scope

The Contractor shall install, own and maintain an automated meter data acquisition system covering Duquesne's geographic service area including a communication network to provide and deliver meter reading and other automated services (as defined within this document) for approximately * meters, including all single phase and three phase demand meters on the present Duquesne system. All required ownership installation and implementation services including mounting of Meter Modules on new or used electric meters and installation of single phase meters at customer premises shall be the responsibility of the Contractor. Three phase meters shall be installed by Duquesne. Single phase demand meters (ABB PowerPlus Alpha meters) which are Transformer-Rated may be treated as three-phase meters if Itron pays a one time per meter installation fee of * .

The Contractor must be capable of completing the installation and operation of a wireless communication network (fixed network) covering Duquesne's service area. The fixed network shall provide single phase meter reading coverage to a minimum of * of Duquesne's meters by June 30, 1998, with optional * coverage by * (see Schedule J). The Contractor must be capable of completing mass meter changeout programs and providing implementation plans which comply with the schedule detail in the schedule portion of the specification. The following services and system features shall be provided by the Contractor:

1. All required installation and implementation services, including purchasing, ownership of all new meters, and mounting of single phase meter modules on new or reconditioned meters and installation of single phase meters at customer premises as defined in Section 3 of this document.

2. Ability to perform daily readings for all meters covered by the fixed network and scheduled meter readings using automated (van) or handheld equipment meter reading technology. 3. Ability to perform real time on demand/appointment readings.

4. Jointly develop and install the interface to Duquesne's information system as described in Section 6.1.3. 5. Near real time outage/alarm notification.

6. Tamper notification at the time of reading for all meters that are ERT equipped.

7. Monitoring of inactive accounts for unauthorized usage.

8. Technological refreshment and regular upgrades to the system to ensure the use of up-to-date technology via change order process if required.

9. Flexible metering capabilities to provide requested functionality such as time of use, demand billing, real time pricing and load profiles, within five (5) days of Duquesne's request. (Requests received prior to 3:00 p.m. each day).

10. Installation of the MV-90 translation system for complex metering functions through use of the ABB PowerPlus Alpha meter for three phase and higher demand (greater than * ) single phase customers.

1.3 Functional Requirements

The Contractor's automated meter data acquisition system shall include a wireless fixed network communication system covering Duquesne's entire service area and shall provide a minimum of * coverage of the total meters at completion of the full system deployment (Phase II). This coverage will increase to * of the total meter population if Duquesne exercises this option by the date defined in Schedule J of the Agreement. The system shall also include the installation of encoder, receiver, transmitters (ERTs) or demand ERTs ( * ) on single phase meters with less than * of demand in Duquesne's service area with all new meters owned by Contractor. Contractor will purchase approximately * single phase PowerPlus Alpha meters and * three phase PowerPlus Alpha meters for installation at Duquesne (see Section 3), with Contractor responsible for installation and maintenance of the single phase Alphas. Monthly meter readings shall be provided by the Contractor for all single phase meters not covered by the fixed network. These monthly meter readings shall be obtained by the contractor by means of either mobile (vehicle readings) or off-site hand-held devices (OMR) or other communications medium selected by

Contractor and furnished to Duquesne in accordance with the buyer's established monthly meter reading and billing cycles. Daily or more frequent meter readings shall also be provided for all single and three-phase Alpha meters using the MV-90 system.

The Contractor's system shall meet or exceed the following system service level requirements.

1. Ownership of all new meters on Duquesne's system; installation of ERTs, * , DCI Sentry devices or PowerPlus Alphas on all single-phase meters in Duquesne's service area (approximately * meters); includes existing and future single-phase demand meters. Purchase, maintenance, and repair of all single-phase meters as described in Section 3 of this document. Purchase of three phase meters during implementation and new three phase meters for new services and replacement meters not otherwise repairable by Duquesne during Phases II and III.

2. Fixed network coverage of * of total single-phase meters at completion of the primary installation phase (Phase II) of the project with an optional increase up to * of the entire meter population as indicated on Schedule J.

3. Daily consumption and demand (KW) readings for all existing and future single phase demand accounts. (approximately * meters at present.)

4. Ability to perform daily reads for all meters covered by the fixed network; provide daily reads between 10:00 p.m. and Midnight for all Customer Choice Option customers contracted for that advanced service (see Schedule D).

5. Monthly reads for all certified single phase meters not covered by the fixed network, DCI Sentry devices or ABB PowerPlus Alpha meters.

6. Daily or more frequent read processing as defined in Schedule D for all three phase meters in Duquesne's service area through the MV-90 system.

7. Ability to perform on demand (unscheduled) reads for all meters covered by the fixed network.

8. Power outage notification and monitoring for all meters covered by the fixed network and MV-90 system.

CCU Level Outage Notification Timely notification alarm when CCU loses power. Timely notification upon restoration of power. Interface with Duquesne's outage management system. * Provide ability to * , interface with Duquesne's system.

Outage incident reporting for C&I accounts with ABB PowerPlus Alpha meters reported through the MV-90 system.

9. Ability to provide time-of-use (TOU) reads for all existing and future single phase TOU accounts - presently commercial accounts only, including residential TOU customers.

10. MIS Interface - jointly develop all applications software and Duquesne/Contractor software interfaces as described in Section 6.1.3 of this document.

11. Capability to provide logical/virtual disconnect function.

12. Capability to monitor inactive accounts for unauthorized usage.

13. Demand (KW) reads for commercial and industrial meters - capability to provide enhanced functions for three phase customers through the MV-90 system. Demand reads for commercial and industrial applications must be measured and maintained by the meter or CCU, until received by the MV-90 system (excludes * meters handled through the fixed network).

14. TOU reads for all classes of customers including residential, commercial and industrial ( * accuracy for residential TOU being performed by the network) - capability to provide similar service for three-phase meters. Demand reads for commercial and industrial applications must be measured and maintained by the meter, until received by the system.

15. Load Profile Reads for residential, commercial and industrial customers capability to initiate load profile assignments and to monitor, store and display load profile data. Load profile reads must be measured and maintained by the meter or CCU until received by the MV-90 system into Duquesne's DISCuS, data warehouse, or other systems. The MV-90 system must retain a three-year storage and access of data for load research and analysis purposes.

16. Real Time Pricing Reads for all classes of customers including residential, commercial and industrial - with similar capability for three-phase meters, using the MV-90 RTP package. Data must be delivered on a near real-time basis initially for accounts processed through the MV-90 system with further enhancements for fixed network accounts as required to meet Duquesne's business requirements.

17. Identification of unusually large shifts of energy use patterns for tamper detection.
18. * Detection of high line loss circuits for circuits covered by the fixed network.

19. Flexible metering capabilities capable of providing rate and service interchangeability with or without the need for meter replacement or changeout.

20. * Actual physical turn-on/turn-off capability.

21. Provide for customer energy management capability including interval data through use of the MV-90 for ABB Alpha customers and GIHP fixed network customers for use in real-time pricing situations.

22. * Signature analysis - appliance end use monitoring information.

23. * System diagnostic capabilities including:

    Circuit monitoring System capacity prediction System load profile Transformer load profile Transformer outage notification Load forecasting

24. Meter and metering services as defined herein, including single phase services through the GIHP, and single and three phase services through the MV-90 system.

25. MIS interface and development services as defined herein.

The functional requirements for the "asterisked items" have not been defined nor developed. Following construction and development, Contractor will make available to Duquesne the option to include, based on contractual agreements, the selected functionality.

1.4 Statement of Services

The following services shall be provided by the Contractor upon implementation of this Agreement:

1. Ability to provide daily meter reads (KWH) for all meters covered by the fixed network.

2. Ability to provide reads from 10:00 p.m. - Midnight each day for customers designated as Customer Choice Option customers and contracted for such service under Schedule D.

3. Ability to provide daily demand (KW) reads for all single phase demand accounts covered by the fixed network (using * or ABB PowerPlus Alpha meters), including the MV-90 system. Ability to supply billing determinants through MV-90 system for Alpha meter accounts to arrive at peak demand (KW) for billing purposes and reset of demand each month coincidental with billing period. Single phase accounts greater than * will be equipped with the ABB PowerPlus Alpha meter and processed through MV-90, while the remaining single phase demand accounts will generally be handled through the fixed network using the * device.

4. Monthly meter reads for all remaining certified single phase meters not covered by the fixed network.

5. Ability to perform unlimited on demand/appointment readings for all meters on the fixed network.

6. Simultaneous group readings as required for various categories or groups of meters to be determined by Duquesne.

7. Near real time tamper notification and reports for all meters covered by the fixed network. The tamper reporting application shall record each occurrence of tampering at each meter. Periodic tamper reporting for ERT'd meters not located on the fixed network.

8. Near real time power outage notification at the * CCU level consistent with design criteria in Schedule B ( * based on * ). Outage data will interface with Duquesne's systems as needed to support effective implementation of the outage notification and restoration functions.

9. Logical/virtual disconnect function capability for all accounts covered by the fixed network.

10. Monitoring and reporting of consumption for unauthorized usage of inactive accounts for all accounts covered by the Fixed Network.

11. Delivery of all data to the host billing system as required.

12. Flexible metering capabilities for Customer Choice Option reads, TOU, Load Profile and Real Time Pricing for all accounts covered by the Fixed Network, or processed through the MV-90 applications.

13. Installation testing and maintenance services for all single phase equipment, GIHP system or MV-90 software and other deliverables excluding installation and maintenance services for three-phase meters.

14. Meter and metering services covered under the Agreement.

15. Contractor interface and development services covered under the Agreement, as necessary to fully implement daily reads, billing, DISCuS or other functions through use of * or other necessary interfaces as shown on the GIHP/MV-90 flow diagram (see Figure 1-1).

## 1.5 System Overview

The Fixed Network shall utilize a communications system consisting of local area and wide area networks to remotely communicate with Meter Modules. All transactional data shall be acquired, monitored, and managed by the Contractor's real-time relational database, and stored in a Contractor supplied relational database queried by Standard Query Language (SQL) commands using an Oracle environment.

Actual equipment specifications, including both single and three phase equipment and hardware, are included in Schedule B. These specifications include, but are not limited to, Genesis fixed network equipment and software, end point devices such as * , ERTs, DCI Sentry, single and three phase ABB PowerPlus Alpha meters, * theory and MV-90 system operational and software specifications. These documents will be integrated during Phase II into one overall system specification describing the technical and operational functionality of the complete system.

## 1.6 Implementation

The Contractor shall provide and install all necessary equipment, hardware, software, and services to implement a Genesis fixed network automated data acquisition system in the Duquesne service area. Specific requirements for Meters being equipped with Meter Modules are covered in Section 3 Project Implementation Services, Equipment. The specific Equipment, Software, and Services to be provided are described in this Description of Work.

## 1.7 Implementation Phases

Implementation of the automated meter data acquisition system for Duquesne shall be separated into distinct phases. Phase I shall demonstrate process development and verification. Activities shall test and integrate all processes necessary to install and operate all of the system components (Meters, Meter Modules, radio communication devices, installation tools, Software, etc.).

Phase II is actual installation of the complete system. Primary activities to be performed during this period are completion of all Meter exchanges, Meter Module installations, radio device installations, and software interconnection and integration of MV-90 applications. Included in this Phase is installation of the MV-90 system for three phase and large single phase meters, and initial processing of all customer interval data.

Phase III is the operational phase and consists of the ongoing data acquisition and Meter maintenance services provided to Duquesne by the Contractor. It is expected that Phase I shall be complete prior to Phase II. Phase II shall begin the Meter change out process, provide the phase-in of all new applications and interfaces to Duquesne's systems, and conclude with testing and acceptance by Duquesne. In accordance with Schedule J of the Agreement, the fixed network may be expanded to * coverage of Duquesne's total Meter population, at Duquesne's option.

Preliminary System Flow Diagram
GIHP and MV-90 Operating Systems

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Notes:

1) Diagram represents approximate interactive design of anticipated interfaces and is subject to change based on future design considerations.
2) All system interfaces are not finalized. Some systems, such as the Power Billing System, require further development to define all interfaces.
3) The MV-90 system shown above is comprised of a number of hardware components that are not detailed in the diagram.
4) ABB Envision software may be implemented by Duquesne for management of power quality data provided by ABB's PowerPlus meters, with appropriate interfaces to DISCuS and MV-90 provided (see Schedule J, Milestone #13 High Level Architecture).

FIGURE 1-1

## 2. PROJECT MANAGEMENT

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### 2.1 Project Management Role Definition

As a minimum, the Contractor shall assign individuals to the key positions listed in this section for project implementation. Duquesne and the Contractor consider these positions to be essential and the minimum necessary for successful project completion.

The Contractor shall ensure that the necessary project management is in place to support the transition from Duquesne's current meter reading system to the new fixed network automated meter data acquisition system. Well-established project management, planning, and training processes shall be utilized along with use of an experienced staff of system engineers, project managers, trainers and customer support staff to develop and implement these plans.

#### 2.1.1 Senior Account Manager

The Contractor's project team shall be led by a Senior Account Manager, who maintains overall responsibility for project status and operations. The Senior Account Manager shall be the primary point of day-to-day contact between Contractor and Duquesne and shall track system progress, schedules, changes in scope and budgets.

The Senior Account Manager shall have Contractor's overall project management responsibility. The Senior Account Manager shall be responsible for on time, implementation of the fixed network meter data acquisition system, administration of all activities and ensuring that all milestones, customer satisfaction requirements and other requirements of the Agreement are met.

#### 2.1.2 Project Management Responsibilities

The Contractor's Senior Account Manager shall coordinate Meter Module and radio device installations by Contractor and its subcontractors. Primary installation activities shall focus on tracking project timelines, meeting defined installation goals, maintaining quality assurance and control, managing subcontractors, providing billing and invoicing control, supporting and offering guidance to Duquesne, and resolving complaints and issues regarding installations. The Senior Account Manager shall track installation progress, maintain

installation schedules and appointments, and ensure quality of installations.

### 2.1.3 Project Managers

A Project Manager is one of the project's lead technical team members; however, other technical personnel may be called upon to perform appropriate functions as necessary.

For software related issues, a Project Manager assures that the system software is acceptable in its overall technical design and function, that it complies with requirements and design objectives, and is setup and configured properly.

For hardware related issues, a Project Manager assures that the hardware deliverables meet the system requirements, orders and procures necessary hardware components, supervises technicians, documents system configuration, and arranges for and supervises system staging, integration, and installation.

2.1.4 Technical Coordinators

Specific technical individuals shall be associated with the project and shall be part of the extended project core team. These Technical Coordinators shall be responsible for providing information, procedures, suggestions, and new product information, and assisting with installation issues and anything that pertains to appropriate system implementation.

## 2.2 Duquesne Project Organization

### 2.2.1 Duquesne Project Manager

The Duquesne project team shall be led by the Project Manager who is responsible for project status and operations. The Project Manager shall be the primary point of contact between Duquesne and the Contractor. The Project Manager shall manage and track system implementation progress, schedules, changes in scope, budget, quality control, and coordinate activities among departments.. The Project Manager shall also oversee customer relations and address concerns of any customers this project will impact. The Project Manager will have both technical and fiscal responsibilities for the project.

### 2.2.2 Duquesne Project Organization

The Duquesne Project Organization shall:

a)Oversee the project equipment and software deliverables.
b) Coordinate the interfaces between the new systems and Duquesne's customer information systems.
c) Assign and track action items; request corrective action plans as provided for under the Agreement.
d) Collect progress data.
e) Monitor project installation and coordination, and adherence to Schedule J.
f) Collect project deliverables.
g) Document technical aspects of the project.
h) Audit the quality of installations.
i) Monitor meter conversions and interfaces between Duquesne's and Contractor's systems.
j) Inspect projectinstallations for quality control.
k) Coordinate the transition from manual meter reading to an automated system, including implementation of automated three phase metering.
l) Establish engineering procedures and standards.
m) Assist with installation issues regarding meter conversions.
n) Perform other functions as necessary.

## 2.3 Project Management

### 2.3.1 Tools

Specific and common project management tools shall be utilized throughout the Term of the Agreement at Duquesne. This will provide consistent, revisable documentation that can be tracked both electronically and manually. The following tools shall be utilized:

Project Scheduling: Microsoft Project, version 4.0
Documents: Microsoft Word, version 6.0.1
Correspondence: Microsoft Word, version 6.0.1
Spreadsheets: Microsoft Excel, version 5.0a
Databases: Microsoft Excel, version 5.0a

These tools may be changed or upgraded from time to time with mutual agreement.

### 2.3.2 Scheduling

The Contractor shall provide a detailed project schedule, consistent with both the Meter installation schedule and Schedule J, which identifies specific Milestones, and supports the contractually agreed on Milestone Schedule J, as well as other schedules included herein. This schedule becomes the reference schedule that the Contractor and Duquesne Project Managers shall use to measure project progress.

The top level schedule (presented as Gantt and PERT charts) shall be used to develop a detailed project schedule, in order to assure that all project commitments are based on the same assumptions and milestones, and ensuring that completion dates are consistent and completely listed.

Schedules shall be monitored and status updates provided on a periodic basis by the Contractor or as requested by Duquesne to reflect completed items, adjusted task items or identification of significant changes. Any minor changes shall require approval of Duquesne, major changes will require review and approval by Duquesne and Contractor, and shall be handled in accordance with the appropriate change control provisions of the Agreement.

### 2.3.3 Document Tracking

All documentation, including specifications, manuals, guides, and correspondence, shall be numbered and tracked by both project management teams. Document tracking ensures consistent communication with clear collaboration between the Contractor and Duquesne. Document numbering and tracking schemes shall be determined, jointly, by the project management teams. A specific transmittal form will be developed for use throughout the Agreement.

### 2.3.4 Correspondence

All correspondence, including letters and memoranda, shall be numbered and tracked via the previously specified document tracking mechanisms. All correspondence shall be handled as a transmittal with a cover form that includes appropriate numbering for identification. A specific transmittal form will be developed for use throughout the agreement.

### 2.3.5 Telephone Contact Reports

To ensure that telephone correspondence is accurately tracked and recorded, a contact report shall be generated for all significant communications. These contact reports shall be tracked with a brief communication description, date, and time by the project teams. These reports may be entered into the project correspondence tracking system as requested, otherwise they will not be considered project commitments. Contact reports are kept by both the Contractor and Duquesne organization as appropriate.

### 2.3.6 Progress Reports

Progress Reports shall be provided by the Contractor as formal updates to the status of the project implementation. Reports shall be created and distributed at specified milestone dates, monthly, and as needed or as outlined in the agreement (determined by project management teams). Included within the status reports will be specific milestones, updates, action item lists.

Weekly updates regarding the installation efforts (i.e. number of installed Meter Modules and other equipment, hard-to-get-at-meter-identification, inaccessible meters, and equipment installation issues) shall be provided to Duquesne from the Contractor, based on similar reports from subcontractors. Other reports including graphic displays of project information shall be provided to Duquesne on an as needed basis. In addition to the formalized progress reports, daily verbal communications shall take place between project management. Other reports as required by Duquesne in the Agreement will also be issued.

2.3.7 Action Item Lists

As a means to consistently track open issues and actions, Action Item lists shall be created and updated as necessary. These lists shall be maintained by the project management team and shall be distributed and available to all project team members and other interested individuals as directed by the Project Managers.

2.3.8 Project Meetings

Project review meetings shall be held every four (4) weeks or more frequently as needed through Phase II and as required during Phase III. Meetings shall be scheduled to discuss technical aspects of the project, provide status updates in addition to the status reports, review performance and review implementation changes (i.e. scope, additions, schedules).

2.3.9 Document Review

Specific documents, as defined in Section 8 Deliverables and in Schedule N, shall be provided to Duquesne.

Documentation for Contractor's standard hardware and software is furnished for Duquesne review, but is not typically subject to approval or customization except as specified in the Agreement. If errors are found in standard documentation, comments and "problem tracker"' forms are available to identify the errors for correction. Updated documentation shall be provided to Duquesne as available.

2.4 Change Control Process

Change control is the prescribed process to manage changes defined during the Agreement. To establish a basis for change control, baseline documents are identified to guide the activities on the project. The baseline documents for the fixed network system are described as follows, and these documents are grouped as one document.

Utility Automated Meter Data Acquisition Agreement and Attached Schedules and Exhibits (as Revised) Is the defining contract document that provides for the delivery of defined services and controls all other documents.

Description of Work Is the document that defines all project installation, field implementation and ongoing service activities and is included in the Agreement as Schedule A.

Technical and Functional Specifications Represent subsequent baseline documentation for each component of the fixed network system. These documents detail published engineering specifications for each fixed network system component (both hardware and software), system configuration and diagnostic characteristics, operational manuals and guides, other design specifications, installation procedures, and also includes functional requirements of the fixed network management system. The technical specifications are attached to the Agreement as Schedule B and product, functional or system specification documents will be provided by Contractor as required in Schedule J.

Upon completion of the installation efforts and movement into the operational activities phase (Phase III) the change control processes will continue to remain available to review, monitor, schedule, and approve suggested changes to the fixed network system services or implementation process. All changes which affect the Agreement must be handled as specified under Article IV of the Agreement.

2.4.1 Types of Changes

Change requests are categorized in Two categories: Minor Change if the change is minimal and has no cost, schedule, or other material impact; Major Change if the change is major and causes a cost,

schedule, or other impact. The project management teams shall determine and finalize the type of change classification in accordance with the Agreement. If there is a question on the type of change classification, the request shall be considered Major, and shall require review by the Contractor and Duquesne Project Managers before being finally classified as Minor or Major. (All Major changes must be handled in accordance with Article IV of the Agreement.)

### 2.4.2 Change Control Diagram

The following diagram depicts the method that will be used to handle change requests made by the Contractor or Duquesne during the term of the Agreement:

Change Process Flow Diagram

[GRAPHIC OMITTED]

2.4.3 Change Control Process

The following process shall be used for disposition of changes requested during this Agreement:

a) Either party may initiate a request for change by completing the form included as Schedule K of the Services Agreement.

1) If the Schedule K form is completed by Duquesne, it shall be submitted to the Contractor's Project Manager. Unless otherwise stated in the request for change, Contractor shall within * of the date of the request, advise Duquesne whether the requested change is a Minor Change or a Major Change.

If Contractor believes the requested change is a Major Change, Contractor shall provide a proposal to Duquesne within * unless an extension is agreed upon with its advisement identifying the specific impact on price, scope, schedule or any other impact on this Agreement in sufficient detail for Duquesne to evaluate the reasonableness of Contractor's proposal. Contractor reserves the right to charge Duquesne its time and expenses associated with preparing a proposal, if it is estimated that such effort will take more than 8 manhours to prepare.

2) If the Schedule K form is completed by Contractor, it shall identify whether the requested change is a Major Change or a Minor Change. If a Major Change is requested, Contractor shall include its proposal identifying the impact on price, scope, schedule or any other terms of the Agreement to implement the change in sufficient detail for Duquesne to evaluate the reasonableness of Contractor's proposal.

b) If the change requested by either party is a Minor Change and Duquesne desires that Contractor proceed with the change, the completed Schedule K form shall be signed by both Project Managers and a copy of this shall be maintained in each party's file as authorization for this change, and is considered an official Agreement document.

c) If the requested change is a Major Change and Duquesne desires that Contractor proceed with the change, a Change Order Notice shall be issued by Duquesne to incorporate the change and any authorized adjustments to price, scope, schedule or any other terms of this Agreement.

Upon receipt of an approved Change Order Notice from Duquesne, Contractor shall proceed with the change in accordance with the change order/control procedure.

## 3. PROJECT IMPLEMENTATION, SERVICES, EQUIPMENT

### 3.0 Meter Purchases

Successful integration of meter hardware and services with ERT data delivery functions is critical for the Contractor to provide a fully integrated meter data acquisition system. This integration can be best achieved through the Contractor ownership of all new meters, as well as the ERT, CCU, NCN and other system configuration hardware necessary to deliver data services to Duquesne. Duquesne will maintain ownership of all existing retained meters.

During the course of this Agreement, the Contractor shall purchase new meters required for use in Duquesne's service area where retrofitting meters is not possible for the installation of Meter Modules. For new ERT'd meters, The Contractor shall coordinate with the meter manufacturer to have the ERT module installed at their factory. Other meters shall be purchased with the objective of installing devices, such as * and DCI Sentry to automate the data acquisition function for those meters as well. In other cases, ABB PowerPlus Alpha meters will be purchased by Contractor to meet three phase and large (transformer-rated, above * ) single phase demand requirements.

Purchase of new meters shall be completed by the Contractor in accordance with Duquesne specifications and requirements. Ongoing coordination between Duquesne and the Contractor will be necessary for the purchase, scheduling and delivery of three-phase meters being installed and maintained by Duquesne. Contractor shall adopt industry standards (ANSI, IEEE SCC 31) for communicating Meter data and defining interconnectivity of Meter devices.

Assigning responsibility for ownership and control of meter devices is critical to the successful integration of services required under the Agreement. The responsibility to inspect, test and maintain the single-phase meter population shall provide the Contractor with the overall control necessary to achieve the service level requirements specified under the Agreement. Duquesne shall retain responsibility to inspect, test and maintain the three-phase meter population.

### 3.1 Single and Three Phase Demand Meters

Contractor will ensure that the following single and three phase demand meter requirements are implemented:

#### 3.1.1 Single Phase Meters/Communication Links

Single phase ABB PowerPlus Alpha meters will be installed by Contractor (or Duquesne pursuant to Section 3.9 of the Agreement) on all single phase transformer-rated demand accounts equal or greater than * using telephone line communication links (approximately * meters). Contractor is responsible for providing the meters and telephone modems, and for paying * , if any. Contractor will install, or pay to have installed, the single phase meters, modems, telephone line connections and any other related charges.

3.1.2 *

Single phase demand accounts less than * will be equipped with * devices (see General Note #6) capable of recording * . * accounts will be connected to the fixed network which will deliver * . * will be passed through an appropriate interface to the MV-90 system for * purposes.

3.1.3 Single Phase Interfaces

Appropriate interfaces to the GIHP, DISCuS, MV-90, Power Billing and data warehouse subsystems will be developed by the Contractor to carry out required functions, such as billing, daily reads processing and retail competition supplier reconcilement (see Figure 1-1).

3.1.4 Three Phase Meters

Contractor will purchase approximately * three phase ABB PowerPlus Alpha meters with power quality monitoring functions, outage notification and load profile capability, and the necessary modems for connecting all three phase meters to telephone lines, trunk radio, CDPD or other communications mediums as appropriate for each account having three phase service. These meters/modems will be leased to Duquesne, with a * residual payout (see Schedule E) at the end of Phase III (unless extended beyond 15 years). Duquesne will perform the installation of these meters/modems at the customer's location, with Contractor responsible for establishing the necessary connection at the MV-90 head end system through installation of head end equipment such as the MV-90 server and modems.

3.1.5 Three Phase Communication Links

Contractor will be responsible for providing communication links via trunk radio, CDPD or telephone connections, including monthly communication charges if any, for all transformer-rated three-phase services (approximately * accounts). The trunk radio communications option may be selected by Contractor for meters not utilizing or requiring a telephone line connection if trunk radio is available and compatible with the MV-90 system as described in Figure 3-1. Duquesne will provide connections and assume operating costs for the remaining * three-phase meters.

3.1.6 MV-90 Installation and Interfaces

Contractor will install the MV-90 system and appropriate billing and data interfaces (see Figure 3-1) such that the transition to automated services will be smooth. Three phase interfaces with billing, DISCuS, data warehouse or other systems will be provided by Contractor in sufficient time to permit continued orderly processing of all accounts by the respective implementation dates on Schedule J and the project interface priority list (Figure 3-2).

3.1.7 Installation Timetable

Figure 3-1 describes the timetable for installation of single and three phase ABB PowerPlus Alphas using shared as well as separate phone lines, trunk radio or other communications medium.

3.2 Metering Services

The Contractor shall assume responsibility for all Meter purchase and ownership functions described in the Agreement. Beginning in Phase II, the Contractor will inspect, test, install, remove and maintain all Meters on which an ERT, * or DCI Sentry device has been installed. Duquesne will continue to inspect, test, install, remove and maintain all Meters which are not automated. Duquesne will also continue to perform the actual physical connect and disconnect on all meters during the term of the Agreement. The Contractor will establish appropriate trained staff to perform required support functions. Duquesne and the Contractor shall coordinate the transition of three phase customers to automated three-phase metering and related services based on installation of the MV-90 system. The metering services functions required to support the Agreement Meter provisions are as follows:

1. The Contractor shall provide installation, inspection, testing and maintenance functions for all single-phase

meters at a level that is consistent with Prudent Utility Practices and regulatory requirements. Meter inspection and maintenance activities initiated by Duquesne must be completed by Itron within * of receipt of a service order (using appropriate work order management system; notification before 3:00 p.m.). This effort includes requirements for Meter installations, removals, periodic and sample testing, inspections required for customer inquiries, high bill complaints, tampering or other reasons, and maintenance and general repairs of all damaged or defective meters and related equipment encountered by the Contractor or requested by Duquesne. All data required for recordkeeping or customer response purposes shall be provided to Duquesne in the manner and form consistent with the Agreement.

2. The Contractor shall establish a Meter test and maintenance facility as accepted by Duquesne to complete all single-phase meter test requirements, repair functions and ERT or single phase Alpha meter installation and testing activities necessary to meet system requirements. All testing shall be performed to meet test requirements established under Schedule F. Recordkeeping and reporting requirements associated with these activities shall be maintained consistent with the Agreement.

3. Sufficient metering services support staff shall be required to accomplish the required meter services, and to complete meter sets and removals within * of notification by Duquesne (same notification requirements as above). Sufficient Contractor supervisory personnel shall also be required to oversee this effort and ensure that all obligations covered under the Agreement are satisfied. Duquesne agrees to provide supervisory oversight during the transition period, in order to assist the Contractor in ensuring that all recordkeeping requirements, regulatory compliance issues, and customer satisfaction are maintained.

4. During the Agreement, Duquesne shall retain overall responsibility for all engineering support, standards, procedures, policies, and technology enhancement functions related to the metering services contained in this Section. Contractor shall maintain equipment and facilities that meet all standards for safety, quality and performance

and include appropriate advanced metering technologies to ensure that the overall meter population does not become technologically obsolete during the term of this Agreement. Duquesne shall provide all historical data necessary permitting the Contractor to evaluate its costs and expected resource requirements during this period.

5. Contractor shall utilize intelligence at the meter for computing and retrieving both single and three phase demand and higher level customer consumption data through the fixed network or through the fixed network, including MV-90 applications. The System shall be capable of retrieving the required consumption data from all meters connected to the fixed network.

6. Contractor shall qualify its labor force to ensure that all personnel possess the necessary skills and knowledge required to perform all required job functions in compliance with Prudent Utility Practices and regulatory requirements. Although Duquesne shall not be directly responsible for training Contractor maintenance personnel, assistance shall be provided to Contractor trainers regarding Duquesne's specific standards and practices.

7. All necessary test equipment, tools, and associated accessories to be used by Contractor field maintenance crews shall be provided by the Contractor and comply with Duquesne's requirements and specifications.

8. Duquesne recognizes that certain details related to test, maintenance and inspection requirements shall require further evaluation. Necessary material to support this effort are available for review.

9. Installation of ERT retrofit kits shall be accomplished in one of two manners. For new meters ERT retrofit kits shall be installed by the meter manufacturer. The new, ERT'd meters shall be exchanged with current meters in the field. The Contractor shall select a sample of * from each shipment of * new ERT equipped meters and perform a meter calibration accuracy test in their retrofit center prior to field install. The old meters that are being replaced with new ERT'd meters shall be sorted by the Contractor and/or their sub-contractor according to criteria set forth in Schedule G. Meters meeting acceptable reuse criteria shall have ERT retrofit kits installed by the Contractor or their sub-contractor. Following ERT module installation, all retrofitted meters shall be tested and recalibrated by the Contractor per Duquesne specifications and Pennsylvania P.U.C. rules.

10. Testing of new or retrofitted single phase meters by the Contractor shall be conducted in a timely manner to allow proper inventory levels for field installation. Three phase meters shall generally be tested at the manufacturer's location and shall meet Duquesne's specifications prior to shipping. All retrofitted single phase meters shall have a bar code label attached by the Contractor per Duquesne specifications. During Phases II and III, the Contractor shall retain the option to scrap any old meters and replace them with new ERT'd meters as necessary and appropriate, consistent with Duquesne's requirements.

11. Field-related meter installation and servicing activities by Contractor personnel will be performed in a manner which maintains Duquesne's monthly customer satisfaction ratings. Customer satisfaction ratings will be determined as a result of feedback received from customers at whose locations Contractor performs work related to the Agreement. A Customer Satisfaction Survey card, supplied by Duquesne, will be left with customer for return to Duquesne. Contractor will supply a monthly exception report where appropriate. Performance will be calculated based on the number of surveys returned for the current month with categories weighted as shown below:

| | |
|---|---|
| Friendly and Courteous | * |
| Timely | * |
| Professional and Competent | * |
| Respected Property | * |
| Presentable | * |

3.3 Meter Reading Activities

During and upon completion of Phase II, as routes are assigned or accepted, all meter reading activities shall be handled by the Contractor, except for three phase meters awaiting connection to MV-90. Readings shall be provided for all meters on the Duquesne system, either via the fixed network, the MV-90 system applications or by mobile or manual methods as follows:

Fixed Network - Provide a minimum of daily reads for all meters which are covered by the fixed network. Provide consumption or other data for advanced services at the pricing levels described in Schedule D.

Mobile - Monthly billing reads shall be provided via the mobile system for all meters which have a Meter Module installed but are not covered by the fixed network.

Manual - Duquesne will continue to read three phase demand meters and single phase meters until they are automated. Contractor may also retrieve readings manually, from time to time, where automated systems are unable to retrieve data.

MV-90 System - Daily or more frequent reads will be provided for all three phase and large (greater than * ) single phase customers equipped with an ABB PowerPlus Alpha meter. All such meters will be capable of delivering advanced rates such as time-of-use or interval data for load profile as contracted by Duquesne per Schedule D.

3.4 Meter Records

Maintaining accurate records for meters is critical towards achieving Duquesne's goal for accurate customer billing and customer satisfaction. This goal is best achieved using DISCuS, Duquesne's Information System for Customer Service. This state-of-the-art system integrates five major customer service subsystems including meter records which supports the functions of maintaining meter device, test and location information.

During the Agreement, the Contractor shall maintain records of all meter transactions and update DISCuS records per specifications. Duquesne shall provide the necessary access to its information systems to perform the required record keeping functions.

3.5 Field Installation

The Contractor shall provide the equipment and labor necessary to install, verify operation, and complete all single phase (except for installations performed by Duquesne in accordance with Section 3.9 of the Agreement) Meter exchanges, CCU installations, and NCN installations. This effort includes scheduling the work and arranging appointments, following criteria established by Duquesne (Meter installation for identified socket and A-Base meter sets, not including tamper or diversion of service investigation, etc.). The Contractor shall install the necessary communications facilities, power transformers, service lines and connections needed to provide a fully functional, installed fixed network and headend applications including MV-90 as required to satisfy the Agreement. Duquesne will provide available information concerning the existing pole and transformer population.

The Contractor shall complete Meter exchanges on all identified meters in the Duquesne services area.

The installation crews shall utilize off peak hours if necessary to attempt to contact customers for

inaccessible locations

The field installer shall visit the house and attempt access to the meters for installation (field attempt number one).

If the meter is inaccessible or the installer cannot gain access to the meter or work on the meter due to customer related issues, the field installer shall leave a door hanger provided by Duquesne (written notice number one).

If questions arise due to inaccessibility, work which can not be completed, or differences in the parallel testing efforts (incorrect meter numbers, different addresses, meter reading differences, etc.), Duquesne and the Contractor shall conduct individual or joint inspections to agree on how to proceed.

On a separate occasion, typically another day of the week, the field installer shall re-visit the house to install the new ERT'd Meter (field attempt number two).

If the meter is still inaccessible, the installation crews shall notify the Contractor to send a post card notice. Requesting access and appointment scheduling (written notice number two).

The field installer shall attempt to install the ERT'd Meter a final time (field attempt number three).

The Contractor shall establish a reserve fund of up to * for the purpose of handling service entrance and socket modifications required to complete Meter change installations. The overall contract scope change provisions shall be utilized to address and approve requests in excess of the established reserve fund. Unexpended amounts will be retained by Contractor.

The Contractor shall establish appropriate policies and procedures, subject to Duquesne approval, to regulate and account for all charges assigned to this reserve fund. Periodic audits initiated by Duquesne will be conducted to ensure the reserve fund is properly administered. Duquesne approval shall be required for any job transaction charged to the reserve fund in excess of * . The Contractor shall provide Duquesne with a monthly statement showing the reserve fund transaction details and fund balances for the period. Upon completion of Phase II, all unused dollars in the meter socket reserve fund budget will be retained by the Contractor.

If work on the meter cannot be completed due to meter issues (such as electrical wiring constraints or physical room for the Meter), Duquesne shall be consulted for guidance or other action as may be appropriate to resolve the problem.

If an A-Base meter is encountered, the installer shall install a socket adapter to enable installation of the ERT equipped socket meter. If the A-Base socket adapter cannot be installed due to meter issues (such as wiring constraints, space problem or unsafe conditions), Duquesne and Contractor shall mutually decide how to proceed.

Relocating, replacing, repairing sockets.

Unsafe conditions.

Required rewiring to meet code specifications.

During the time between and following the first and second inaccessible occurrences, the installation crews shall attempt to contact the customer premise via telephone for scheduling and meter access (three telephone attempts). A valid telephone attempt is when the customer can be reached or when a message is left on an answering machine or voice mail. If a meter is inaccessible and the field installer has satisfied the contracted number of three attempts and three telephone call backs, the customer account shall be turned over to Duquesne for evaluation.

Field Installation Specifications shall be developed consistent with Prudent Utility Practices and documented by Contractor, and reviewed and commented upon by Duquesne, including installation of A-Base adapters, meter rings, lock bands, suspected tampering, and seals on electric meters, and other necessary supplies that may be required. These documents shall cumulatively be known as the ERT Meter Module Installations manual and shall be issued by the Contractor for Duquesne's review and comment.

The installation process shall be documented to fully explain the procedures and guidelines with respect to the installation of Meter Modules, Meter exchanges and other on-site field installation efforts. Field installers shall identify and report unbilled meters and customers using without a meter. Meter exchanges with ERT equipped meters should be performed as these conditions are encountered. Included in this document shall be procedures for office operations, customer information system data input, installation expectations, and general guidelines.

Duquesne shall define and schedule the specific work routes where the ERT Meter Modules shall be installed. The installation territory is divided into specific work units that represent a cycle day's work. The work units are comprised of Routes that the meter readers currently follow. Installation crews shall follow the same work Routes across multiple work units within a given day. Routes will be vertically selected across work units to allow for consistent, systematic removal of manual routes across the territory. Such scheduling shall attempt to be within the window of the last billing date and the future reading date. Duquesne will attempt to schedule the Routes to allow efficient installation and permit the information systems to be updated with current operations. Work routes shall be selected and prioritized by Duquesne using a selection criteria including (1) "hot spot" identification, (2) balance within routes and work day, (3) large work unit classification, (4) parts of a route versus full assigned route (5) billing and customer communication schedules. However, maintaining flexibility while selecting work routes is a key function that shall be monitored by the project management teams. Routes shall be considered completed when * of the ERT capable meters have been retrofitted with ERT Meter Modules and when certification testing has been completed. Detailed exception lists shall be prepared by the Contractor showing completed routes and accounts without installed ERTs.

3.6 Field Equipment and Other Installation Maintenance Items

ReadOne Pro units are used to program ERT Meter Modules, assist in the installation of the ERT Meter Modules on the electric meters in the meter shop, and complete electric meter exchanges via work order transactions. All necessary ReadOne Pro handheld computers and all associated accessories (i.e. batteries, chargers) to be used by the Contractor field installation and maintenance crews shall be provided by the Contractor. Up to * units to be used by Duquesne employees shall be provided by the Contractor. Duquesne shall provide and accept, electronically to the ReadOne Link application software, appropriate work order transactions based on selected work units and routes. The ReadOne Pro software shall be modified, as necessary, to accommodate Duquesne's service order processing system.

Other necessary equipment shall be provided by the Contractor to further facilitate the installation or testing of the ERT Meter Modules and meter exchanges, as well as installation and testing of * , DCI Sentry devices, single phase ABB PowerPlus Alpha meters, and any other equipment, including communication lines.

Installation and maintenance crews (Contractor's and Sub-Contractor's employees) are required to wear an identification vest or shirt and badge at all times while installing equipment in the field. Duquesne shall specify the requirements related to proper identification or uniform type.

Specific training needs shall be addressed on an as needed basis during the installation process. For field installation efforts, Duquesne is not responsible for training the Contractor installers directly, however, groups of trainers may require specific training with regard to Duquesne's operating practices.

The Contractor shall either provide or upgrade a sufficient number of Duquesne's existing handheld units, up to eight, to enable Duquesne to perform OMR readings for the purpose of reviewing and monitoring readings and service activities and capabilities.

3.7 MV-90 System Implementation

Automation of large (transformer rated, * or greater) single and three phase demand accounts will occur in conjunction with implementation of the UTS MV-90 applications with appropriate interfaces for load research, load profiling, power billing, power quality event reporting, and enhanced services as defined in Schedule D. Access to the MV-90 system hardware and software will be provided to Duquesne by Contractor to facilitate an automated solution for complex metering by the implementation dates specified on Schedule J.

Contractor will provide Duquesne with unrestricted access and use of all capabilities of the MV-90 system needed to satisfy Duquesne's business requirements, including data collection, validation, editing, totalization, reporting, historical data,

load research functions, rate data, load control, power quality event reporting, outage reporting, etc., as more fully described in the MV-90 Reference Guide and in Schedule B, and will provide maintenance, support, software upgrades and other services as provided under the Agreement at no charge to Duquesne.

Duquesne will operate the system and perform data processing functions in conjunction with Contractor to minimize operational requirements and redundancy of personnel. Contractor will install, test and implement the MV-90 applications and hardware and train Duquesne personnel on MV-90 operation. Thereafter, Duquesne will perform most daily data processing activities.

3.8 Work Facilities

Separate work facilities shall be required for the Contractor project team as well as the installation and maintenance teams. The Contractor project team may be located at a permanent Operations Center located in a Duquesne facility or some other location. The facility space requirements include: necessary work space, office space, and also shop space and storage/warehouse space needs which will be provided at a Retrofit Center Facility at a location approved by Duquesne. Furniture requirements and accessories shall be determined as necessary. A separate long term maintenance, test laboratory, and equipment storage facility shall be required upon completion of the installation process.

Installation crew facilities shall include space and operation efficiency systems for operations involving sufficient number of people, training facilities, phone operations for scheduling and appointment planning, management, and any additional required activities. Warehouse space shall be necessary to house shipments of ERT Meter Modules from the Contractor, new single and three phase meter shipments from the meter manufacturer, reconditioned meters and returned meters from the field to be scrapped. Similarly equipped facilities shall be required for a maintenance crew.

3.9 New Developments

ERT Meter Modules and associated reading devices (Handhelds, DataCommand Units, Cell Control Units and all other equipment) are typically designed with backward compatibility to ensure that future technology developments can be adapted and applied to existing systems. While the direction of future developments during the 15-year Term cannot be completely predicted, Contractor guarantees that as a minimum it will maintain the Equipment to ensure that all services included under the Agreement will continue to be provided.

As future ERT Meter Modules are developed, the reading technologies are expected to be able to read and implement available functionality. New ERT development may include added functionality. For example, there are currently three generations of gas ERTs with expanded functionality in the field that are all being read with the same devices. The Contractor shall contact Duquesne management upon the release of new ERT and system products that may be possible additions to the Duquesne system, when they are available.

As system components are modified and updated, including software, hardware, and firmware, the Contractor shall notify Duquesne concerning recommended operational adjustments to the fixed network system affecting Duquesne's operation and maintenance. It is understood by both the Contractor and Duquesne that future enhancements, and upgrades of the Genesis Fixed Network and MV-90 system software, automated applications, and related improvements shall be provided to Duquesne during the period of the Agreement via the change order process, except for those items provided by the Contractor to its other customers under maintenance agreements at no additional charge. It is also understood by both parties that * shall be given to Duquesne, throughout the term of the Agreement. This includes any MV-90 system and network related applications or client end use applications software that may be developed and would be desirable and provide benefits to Duquesne.

3.10 Project Schedule (Gantt Chart - High Level)

An essential part of any project is the ability to track milestones and tasks. The project schedule is the tool that shall be implemented to track milestone dates, tactical items, and responsibility check points. (See Section 2.3.2 Scheduling) Contractor agrees to support the milestone dates outlined in the revised Schedule J.

3.11 Delivery Schedule

The Contractor shall provide a system that shall include the necessary software and hardware to provide the required functionality. Appropriate inventory lead times shall be followed as necessary to maintain scheduled installation activities in accordance with the installation schedule.

3.12 ERT Installation Schedule

The following Meter Module Installation Schedule has been developed to support the ERT installation project Milestones listed on the revised Schedule J. The Contractor will meet or exceed this Schedule as required to achieve the Agreement's September 30, 1997 Milestone completion date.

| MONTH | DESCRIPTION | MONTHLY INSTALLS | CUMULATIVE INSTALLS |
|---|---|---|---|
| * | Begin Installation | * | * |
| * | | * | * |
| * | | * | * |
| * | | * | * |
| * | Begin Retrofit Operations | * | * |
| * | Ramp Up Meter Installations | * | * |
| * | | * | * |
| * | Stabilize Installations | * | * |
| * | | * | * |
| * | | * | * |
| * | Peak Installations Achieved | * | * |
| * | | * | * |
| * | Ramp Down Meter Installations | * | * |
| * | | * | * |
| * | | * | * |
| * | Complete Initial Contact ( * Customers) | * | * |
| * | Complete Route Saturation/Cleanup | * | * |

Notes:

1) Monthly installs are actual totals through June 30, 1997.

2) Contractor will achieve appropriate mix of new and reconditioned Meters to assure installation schedule can be achieved in a timely manner.

3) Above schedule excludes final URD deployment requirements related to use of DCI Sentry devices (see Schedule J).

4) All ERT'd meters, excluding certain exempted accounts, should be installed by September 30,1997.

3.13 Fixed Network/MV-90 Equipment Installation

Contractor shall install all fixed network equipment, single phase PowerPlus Alpha meters with communication lines, and MV-90 hardware and software by the dates shown on Schedule J. Sufficient GIHP hardware should be deployed to support a * account fixed network by December 31, 1997. Installation of end point devices such as DCI Sentry, * , three phase Alphas, etc. should support the revised project schedule.

3.14 Contractor Responsibilities

The following items are included under the responsibilities

for the Contractor.

Any tools and equipment necessary to complete installation of the fixed network, MV-90 and single phase end point devices are the responsibility of the Contractor.

Delivery of fixed network systems, applications and MV-90 documentation:

- Operating Manuals and Tutorials
- System Description
- Functional Specifications or Reference Guides
- Licenses (described elsewhere in the Agreement)

Delivery of MAMR system & documentation.

Delivery of at least * for reading ERTs not on the Network.

Project management services.

ERT Meter Modules, ReadOne Pro units, OMR handheld units, CCUs, NCNs, GIHP, MV-90 system including all hardware, single and three phase PowerPlus Alpha meters, other end point and network hardware as required to satisfy the delivery of data devices such as * and DCI Sentry.

Ship hardware per installation schedule.

Provide ReadOne Link.

Supply, configure, integrate GIHP software, databases, NMS software, customer information system software, client applications software related to network, MV-90 software, communications software for linkage of PowerPlus Alpha meters to MV-90.

Supply, configure, integrate DCLINK software and DCU system software.

Install ERT Meter Module retrofits on new and old meters in a meter shop atmosphere; Meters shall be tested before installing in the field. Install single phase PowerPlus Alpha meters.

Perform single phase Meter field exchange and customer data update process.

Supervise shipment schedules.

Track and verify financial and budgets, provide management reports.

Provide maintenance support, testing, meter changes, inspections, repairs of single-phase meters, and associated end point devices.

Provide all equipment necessary to test Meters in field and shop.

Provide office and shop equipment for the installation crews (i.e. PCs, shop benches, vests, id badges).

Supply additional client software related to network management and applications herein.

Recycle/Scrap old meters not being reconditioned (except for three phase, single phase demand meters). (During Phase II, as-found testing and register readings will not be required.)

Perform testing and calibration of meters before field installation.

Supply equipment and train installers for the installation of the ERT Modules, Meters, CCUs, NCNs, and any other end point devices to be installed by Contractor.

Acquire shop office, lab and warehouse space for installation and meter shop operations.

Complete installation of A-Base adapters and replacement of all lock bands. Complete installation of necessary communications lines where no Duquesne communication facilities exist; install communication lines for single phase and transformer-rated three phase PowerPlus Alpha meters (approximately * accounts) to MV-90 system.

Locate and acquire tower space for NCNs where no Duquesne towers exist.

Install transformers, service lines, and connections to Duquesne's facilities as needed to energize the Contractor equipment.

Secure Rights of Way on third party locations not owned by Duquesne.

3.15 Duquesne Responsibilities

The following items are included under the responsibilities for Duquesne.

Use of Duquesne pole space where available.

Use of Duquesne tower space where available.

Use of Duquesne communication lines where available.

Provide space for NCNs on Duquesne owned towers.

Review and comment on standard documentation.

Provide access to Duquesne's facilities for on-site work by the Contractor.

Assist with route scheduling, training, support, management.

Audit installation quality.

Evaluate obsolete and non-functioning meters.

Provide available electric meter installation procedures and instructions in written form. This allows the Contractor and its representatives to follow proper installation techniques that meet Duquesne's criteria.

Provide materials for Meter installations which are the responsibility of Duquesne, thus provided by Duquesne (locking bands, all sealing devices, and A-Base adapters).

Provide locking bands (appropriate number of keys shall be provided to the Contractor). Contractor will follow appropriate procedures for securing and tracking keys provided by Duquesne.

Public Relation fliers, bulletins, announcements, postcards, postage, door hangers.

Review of installation goals, schedules and procedures.

Provide installation labor to support installation of three phase PowerPlus Alpha meters (see Section on Meter installations).

Provide communication links for approximately * three phase self-contained meters which are not Contractor's responsibility.

Provide personnel for operation of MV-90 software and processing of information collected therefrom.

Communications Link Alternatives Diagram
Three Phase Meter Installations

Installation Timetable

| First (1) Pass Installation Period (Shared Telephone Lines) | Limited Option Customer Installations Begin (2) | Final Deployment Period (Stage I) a) Limited Option Customers b) Customer Choice Option Customers | Final Deployment Period (Stage II) a) Remaining Installations Completed * by * , b) * by * |
|---|---|---|---|
| * | * | * | * |

Final Deployment Date

Initial Population: * Meters

Anticipated Installation: * Meters

First Pass Projected Success Rate: *

Remaining Population: * Meters

Difficult Locations: * Meters (Telephone Lines)

Location Success Rate: *

Remaining Population: * Meters

Alternative Carriers: *

Trunk Radio/Separate Line: *

Telephone/RF/Private Carrier Options (3)

Trunk Radio or Alternative Carrier: Remaining Customers *

Projected Final Deployment Profile ( * meters)

| Communication Cost Responsibility | First Pass | Limited Option | Private Line Alternative | Trunk Radio |
|---|---|---|---|---|
| Contractor | * | * | * | * |
| Duquesne | * | * | * | * |
| TOTAL | * | * | * | * |

Total Contractor Responsibility: * Three Phase Meters

Total Duquesne Responsibility: * Three Phase Meters

I. Communications Alternatives

Several communication link options are available for use by Contractor to support the installation of three-phase metering through the MV-90 translation system. These options include telephone lines, trunk radio or CDPD cellular service depending on such factors as cost, reliability, availability, and customer impact. Contractor and Duquesne both agree to utilize best efforts to minimize communication costs and to work jointly to optimize the installation with the least possible impact on either Company.

a) Duquesne agrees to make available its proposed trunk radio system for three-phase communication services at no charge to Contractor other than payment of incremental head end and technical support costs associated with use of this system, if and when the trunk radio system becomes available. Such costs would be appropriate only for the three phase, and also the single phase ABB Alpha meters for which Contractor has communication responsibility.

b) Duquesne agrees to aggressively promote the use of shared telephone facilities to minimize the cost to Contractor for payment of monthly line charges or other communication costs. In this regard, Duquesne will initiate a customer notification and authorization program with its customers.

FIGURE 3-1

c) Contractor and Duquesne will aggressively pursue the installation of shared telephone line connections, and separate telephone connections for customers where there is no suitable alternative to meet Duquesne's timetable for completion of installation efforts identified in this section.

d) For customers where shared lines are not an option, Contractor will subsequently pursue the use of trunk radio technology or other private carrier options as the next alternative after shared telephone line communications until such time as other alternatives are ruled out, or until the * final deployment date.

e) Beginning * , once the final communication choice is determined, Duquesne will aggressively pursue the installation of the remaining three-phase meters using the appropriate communications medium until all installations are completed. Contractor agrees to support completion of and provide system support for * of all three-phase installations by * and * by * , with the understanding that existing customers opting for customer choice (Customer Choice Option Customers) will be connected by any available communication means if requested by Duquesne from * until completion.

II. Definitions

a) Shared Telephone Lines: Existing telephone connections already in use by the customer which can be interconnected to the telephone modem to provide the necessary communications capability.

b) Separate Telephone Connection: If customer fails to agree to a shared connection, a separate line can be brought in to operate the meter device and modem. This "exclusive" line may cost an estimated * per month in addition to the approximate * /minute per day data packet charges incurred on all telephone line connections.

c) Limited Option Customer: Some customers, due to location, physical restriction or other reason, may require separate telephone line connections as the only feasible method for communication with the meter, if they have not already agreed to shared telephone lines.

d) Final Deployment Date: The date specified in the agreement for commencement of final deployment efforts using the available communications alternative.

e) Customer Choice Option Customer: A customer potentially desiring to shift to an alternate energy supplier will be a candidate for immediate connection to MV-90, using separate telephone lines if necessary, from * until completion, if requested by Duquesne.

III. Projected Deployment Formula

On or around * Duquesne will begin deployment of the ABB PowerPlus Alpha meters with telephone line connections using the shared line alternative. This approach should produce an estimated * acceptance rate. Beginning * , (Stage I) efforts will begin to install metering for the Limited Option Customers (estimated to be * of the population) where RF communications methods are not believed to be a viable alternative. Contractor also agrees to proceed with connections to Customer Choice Option customers beginning * (or beginning * if Duquesne pays the line charges until then).

FIGURE 3-1 (CONTINUED)

Installation efforts will continue in this manner until * , or earlier if acceptable communications alternatives are found. At that time, the final deployment rollout effort (Stage II) will commence using the appropriate communications alternative, shown on the installation chart. By * , * of all installations will be completed, with * completed by * .

Notes:

1) Contractor limited to one time telephone installation and/or service activation charge of * per customer per installation for three phase Alpha installations (no limit for single phase Alphas). Duquesne is responsible for three phase telephone installation charges in excess of this amount.
2) Installation of Limited Option Customers can begin * if Duquesne pays line charges until * .
3) Contractor's line costs are capped at * per month over the length of the Agreement.
4) Contractor will provide the appropriate modem type in each ABB PowerPlus Alpha meter that coincides with the type of communications link that will be used.

FIGURE 3-1 (CONTINUED)

GIHP/MV-90 INTERFACE PRIORITY LIST

Following is a listing of identified interface priorities to date based on Duquesne's current understanding of Contractor's proposed MV-90 system functionality and data flow paths.

1. Billing Interface Requirements

a) Sentry Consumption Data Through Fixed Network *
b) MV-90 Determinants - Power Billing Package Delivered *
c) MV-90 Billing Determinants - (Current Complex Meters - * )*
d) Consumption/Demand/KVAR Through DCI, DCO, HHC & MV-90 *
e) * Consumption/Demand Data Through Fixed Network *

2. Daily Consumption Data Through Daily Reads Processing

a) Kilowatt Demand (Daily Reads with KVAR & TOU) - MV-90 System *
b) KWHR Consumption (Daily Reads with Demand) - Sentry/ * Devices *
c) TOU Data Collection (Version 2.5 Software) *

3. Load Profile Accounts

a) MV-90 to Data Warehouse Interface - Interval Data-Class Profile?*
b) Standard ERT'd Meters on Fixed Network - Up to * Intervals*
c) * Meters - Interval Data *
d) Sentry DCI - Interval Data *

4. Rate Scheduling Interfaces ( * Required)

a) Assigning Device to Rate *
b) Create New Rates *

5. Events and Alarms)

a) CCU Outage Detection * *
b) CCU Outage Detection * *
c) Alpha Meter Outage *
d) * *
e) Sentry Outage *

6. Real Time Pricing

a) C&I Accounts Through MV-90 RTP Package (Large) *
b) C&I Near Real-Time Interface (Small) *
c) Fixed Network Accounts Through Near Real-Time Interface *
(Potential * Requirement)

7. On-Request Reads *

8. Virtual Turn On/Off *

9. MV-90/DISCuS/Data Warehouse Data Synchronization *

The above list is not considered final. Continuing evaluation of MV-90 and GIHP applications, such as load research and power billing system, is expected to identify other critical interfaces which will be evaluated for appropriate file transfer mechanism (such as * ) and required implementation date.

NOTE:
PBS Power Billing Package delivered * will support an operational date of * .

FIGURE 3-2

# 4. FIXED NETWORK SYSTEM COMPONENTS

## 4.1 Description

Fixed network and MV-90 implementation will be accomplished by installing a fully functional, vertically integrated system for data acquisition purposes, including the Genesis system for standard ERT, DCI Sentry and * applications, and the MV-90 system for three phase and large (transformer rated, * or greater).

Within the Duquesne territory, the Contractor shall install fixed network components to gather data on Duquesne customer usage. Provide fixed network data acquisition, all meters in Duquesne's service area shall be saturated with ERT Meter Modules. The fixed network system shall utilize radio or other communications, which have been integrated with the Cell Control Units (CCU), Network Control Nodes (NCN) and GIHP to remotely communicate with the ERT Meter Modules in the saturated area and gather data on each customer's usage. The MV-90 system shall utilize communication links as necessary to deliver data between the ABB PowerPlus Alpha meters and headend systems including MV-90 software applications.

## 4.2 Hardware Deliverables

### 4.2.1 ERT/ * /Sentry Meter Modules

Contractor shall provide and install Meter Modules, * or DCI Sentrys for the Contractor's installation in the Duquesne service area. Specific quantities of equipment types for electric meters shall be determined based on installation within the territory. Retrofit kits shall be delivered for installation on existing meters; additionally, Contractor should identify planned meter acquisition to allow for meters to be delivered from the meter manufacturers with ERT Meter Modules already installed. The exact type and manufacturer of these meters shall be coordinated with Duquesne and can be any of the meters on Duquesne's approved Contractor meter list.

ERTs and * are a low power radio meter modules used in the Contractor's Off-Site Meter Reading (OMR), Mobile AMR (MAMR) and fixed network AMR systems. They are designed to encode consumption and tamper detection on electric, gas, and water meters, receive a radio frequency "wake-up" signal from and transmit data back to the reading device transceiver. (Please refer to the ERT Meter Module, * or DCI Sentry product specification sheets for specific equipment information and specifications.) Contractor shall implement a technology that is capable of retrieving demand and higher level consumption data from the meter. The ABB alpha meter and * are two alternatives that are available to meet this requirement. Other mutually agreed solutions may become available to meet this requirement if best industry practices and regulatory requirements can be satisfied.

### 4.2.2 ERT Meter Module Operation

The high data integrity during transmission of the ERT Meter Modules is achieved through a sophisticated preamble and Cyclic Redundancy Check (CRC) technique that assures data integrity. The Manchester-encoded data includes the following information:

Preamble
ERT meter module identification

Electric consumption
Tamper status
CRC error check

The ERT Meter Module also incorporates a theft detection or tamper feature. Individual tamper indicators are counted when the ERT Meter Module experiences a meter removal/inversion and when the ERT Meter Module is tilted past a 60 degree angle in any direction. These separate tamper flags are then transferred to the billing computer and can be compared to previous counts for possible theft detection.

The electric ERT Meter Module receives power from an AC transformer connected to the primary side of the potential coil. The ERT Meter Module is tested to meet appropriate ANSI C12, 1988 specifications. For complete reference, the test results from the ANSI testing shall be made available to Duquesne upon request; Duquesne Meter Engineering has received copies of the test results.

The pulse initiator technology of the electric ERT Meter Module utilizes reflective optics located behind the meter nameplate and is a proven technology that ensures reliable retrieval of consumption data. A light absorbing stripe is placed under the meter disk and activates the optical sensor with no added drag to the disk. A common housing provides shrouding and secure mounting with no adjustment.

The electric ERT Meter Module shall incorporate a theft detection feature. Individual tamper indicators are counted when the ERT Meter Module experiences a power down/up and is tilted past a 60 degree angle in any direction. The tamper status is compared to its previous state and any change would be reported as a suspected tamper.

4.2.3 * /DCI Sentry Devices

These fixed network devices function in accordance with the specifications included in Schedule B and will provide special purpose end point applications as required to meet contractual requirements for daily reads, demand and interval data or to provide advanced services when contracted by Duquesne per Schedule D. Contractor will be responsible for the telephone line charges associated with DCI Sentry installation and operation; this device will be limited in use to achieve fixed network coverage and for other residential applications such as URD unless alternate uses are subsequently approved by Duquesne. Other similar devices may be developed from time to time during the course of the Agreement which may be utilized subject to review and approval by Duquesne based on best industry practices and regulatory requirements. Specifications for such approved devices will be provided by Itron for inclusion in Schedule B.

4.2.4 Cell Control Units (CCU)

Sufficient CCUs shall be delivered installed and appropriately placed for reading the Meter Modules. The CCUs shall be installed by the Contractor in conjunction with Duquesne to collect data from the meter modules and to monitor power outage conditions at * the CCU * .

The CCU is a fixed point data collection device which requests, receives, and stores ERT and * Meter Module data. It shall consist of two radio transmitters, two radio receivers, and a microcomputer all housed in a single cabinet mounted on a pole. An antenna shall be used to transmit the "wake-up" signals and to receive the incoming Meter Module transmissions; these messages operate but are not limited to operate on the

* MHz transmit and * MHz receive frequencies.

4.2.5 Network Control Nodes (NCN)

Sufficient NCNs shall be installed for communicating to the CCUs, other NCNs and the GIHP. The NCNs shall be located on Duquesne's microwave tower sites (or other appropriate location) and shall be installed by the Contractor in conjunction with Duquesne to collect data from CCUs.

The NCN is a fixed point data collection device which requests, receives, and stores meter module data from the CCU. It shall consist of a radio transmitter, a radio receiver, and an industrial computer. An antenna shall be used to transmit messages to the CCU to request ERT data and to send transactional message commands, the antenna also receives and manages data from the CCUs to pass on to the GIHP; these messages operate on the

* frequencies (specific * information is covered under non-disclosure agreements in a separate contract and can be obtained by contacting the project management team).

4.2.6 GIHP Computers and Computer Equipment

DEC Alpha or IBM RS6000 Workstations, or other compatible physical platform that is mutually agreeable to both Duquesne and the Contractor, shall be provided for the Genesis Itron Host Processor (GIHP) platform. This unit shall operate the real-time relational database polling engine of the Fixed Network. A similar physical workstation shall be used for the operations of the Network Management Software. Moreover, a similar physical workstation shall be used for housing the `historical' relational database that shall be the interface to the client applications and billing interfaces, which shall be an Oracle database. Two network monitoring workstations shall be provided to Duquesne for monitoring network operations.

A sufficient quantity of modems shall be necessary to communicate between the NCN and the GIHP, to provide diagnostic support for the NCN, to provide operational support services and assistance in troubleshooting. Modems shall be supplied by the Contractor.

Several telecommunications lines shall be necessary to communicate between the NCNs and the GIHP and to provide diagnostic support the of the NCNs. Specific numbers and configuration of the phone lines shall be provided during the installation process. Telecommunication lines not available through Duquesne shall be provided by the Contractor.

4.2.7 UTS MV-90 Translation System Hardware

Many different hardware configurations are capable of supporting the MV-90 system. Most importantly, the system must support a large number of customers (approximately

* accounts) with efficient data management

and timely data throughput. Contractor will provide the necessary system hardware to install the system and provide access to Duquesne's local area network (LAN) through a LAN connection, with a Windows NT operating system and associated drivers required to run the system in a multi-user, multi-tasking environment consistent with the MV-90 system's operational capability. Contractor will provide the appropriate Master Station hardware with backup capable of running the MV-90 System for meter data management. Data collection functions will occur through use of Contractor supplied NT servers and specialized NT workstations, with sufficient capacity to poll all MV-90 meters within an acceptable timeframe and to successfully manage the required data processing and throughput. Based on current data requirements for polling and processing capabilities the UTS mid-range system is targeted for installation, should subsequent information dictate, or system growth require, the installation of increased capacity and throughput, Contractor will increase system capabilities appropriately.

4.2.8 Additional MV-90 Equipment and Support

All supporting equipment, including terminal servers if needed, modems, the Local Data Server if needed, specialized NT workstations (cubix system processors), and any other head end hardware required for satisfactory operation of the MV-90 system at Duquesne's level of account activity will be supplied by the Contractor. In addition, Contractor will provide full maintenance support of all MV-90 equipment throughout the term of the Agreement. (A typical hardware installation requirement is shown on Figure 4-1). Duquesne will provide the operational capabilities and support described in Section 3. Contractor will support all equipment required for daily processing, presently anticipated to be three workstations on site at Duquesne. Contractor will not support installations at Duquesne's customer sites for MV-90 read-only RTP installations.

4.3 Software Deliverables

Contractor shall provide the following software systems:

4.3.1 GIHP Operating System Software

The GIHP system software is the transactional, relational database used by the fixed network collecting information from the system components for presentation to other applications via SQL transactional messages, and shall interface with the Duquesne Customer Information System. The GIHP operating system shall come delivered or be loaded by the Contractor personnel upon delivery.

4.3.2 Genesis Network Management Software

IBM NetView 6000 shall be used as the Simple Network Management Protocol (SNMP) network management software. The NCNs and CCUs are SNMP compatible devices and are designed to be managed using SNMP standard software. Thus, IBM NetView 6000 shall be used to manage the Genesis Fixed Network.

4.3.3 Genesis Automatic Meter Reading Software

The Automated Meter Reading Software works in conjunction with the Network Management Software in order to collect KWH meter data from the fixed RF network equipment. All standard and newly developed network applications will be provided.

4.3.4 Genesis SQL Client Applications

Among the fixed network client applications provided and more fully defined in this Agreement are the following:

a) Consumption Metering

b) Residential Time-of-Use

c) Daily Reads Processing

d) Tamper Reporting/Monitoring

e) Customer Choice Option Reads

f) Virtual Disconnect/Connect

g) Upon Request Meter Reads

h) Outage Detection/Restoration - CCU Level

i) Outage Detection/Restoration - *

j) Create Groups

k) Group Time-of-Use

l) Group Load Profile

m) Group Consolidated Consumption Metering

3

n) Group On-Request Reads

o) ERT Read Schedule Modifications

p) Load Profile

q) Storage of History Data

r) Database Population

s) Interface into Billing

t) Interface into SQL Database

u) Other Applications as Described in Schedule B

4.3.5 MV-90 Data Management Software

Contractor will provide and install the UTS MV-90 Multi-Vendor Translation System software for consolidation and processing of all three phase and transformer rated (greater than * ) single phase services primarily using ABB PowerPlus Alpha meter technology. Included in this system are the following packages (descriptions included in Schedule B):

1) Base System with Reporting Package
2) TOU Option
3) Load Research/Load Profiling
4) Power Quality Functions
5) Real Time Pricing System
6) MV-PBS Power Billing System
7) MV-90 Read Only System
8) UTS Load Control Station

Contractor will provide licensing, documentation, installation, training and ongoing software maintenance support for the length of the contract. Contractor will provide services of two system/communication analysts or administrators as necessary for effective operation of the system throughout the term of the Agreement. Hardware for installation of the MV-PBS Power Billing Package will be provided by Duquesne or made available under mutually agreed leasing arrangement.

The MV-90 Multi-Vendor Software will include the following software in the base system package for use on the Master System as well as for use on Local Data Servers when used for distributed data collection.

MV-90 Base System with Reporting Package Remote Interrogation Package Totalization Package Time-of-Use Package Graphics Package Lotus File Format Package PC to Host File Transfer Package Direct Unload of Handheld Readers Load Research Package

A software license agreement will be provided to Duquesne describing all licensing rights granted to Duquesne throughout the Term and will be signed and returned to UTS. All software provided will be standard, currently available applications or, the soon-to-be-released application for MV-PBS. Software customization will be provided via the software development fund. Modifications, enhancements or upgrades provided at no additional cost to other clients under maintenance agreements will be provided at no cost to Duquesne. All other modifications, enhancements or upgrades will be provided to Duquesne with preferred pricing.

4.3.6 ABB PowerPlus Alpha Software

In connection with the purchase of single and three phase ABB PowerPlus Alpha meters, ABB will furnish the necessary software to support power quality monitoring functions and management of the C&I meter

instrumentation and diagnostic functions. While this software will be supplied with the ABB Alpha meters, interface with DISCuS, MV-90 system or other functions will be required and is identified on the high level architecture provided via Milestone #13 of Schedule J.

4.3.7 Licenses, Training and Support

The following licensing rights and support services will be provided to Duquesne:

| Software License | License Fee | Monthly Support Included |
|---|---|---|
| 1) Multi-Vendor Data Collection (Basic License) | * | * |
| 2) Oracle Enterprise Database Oracle Silver Support | * | * User |
| 3) Real-Time Pricing System Customer Software (see Schedule D) | First * * customer Thereafter | * |

Contractor will provide sufficient support to implement the MV-90 system at Duquesne, which will include but not be limited to, Project Administration, hardware/software installation, test plan development and implementation; start-up support, training and preparation of all required documentation. Actual software license(s) will be provided to Duquesne in the event of termination of the Agreement.

4.3.8 MV-90 Documentation

Contractor will deliver to Duquesne a complete UTS MV-90 Translation System specification covering all base system software packages and other software deliverables listed in Section 4.3.5 (four (4) sets). In addition, all other required documentation, such as user operating and training guides, hardware and software system descriptions, maintenance guides, diagnostics, security, licenses, warranties, etc., will be provided to Duquesne 30 days prior to installation.

TYPICAL HARDWARE REQUIREMENTS FOR
BASE AND ENHANCED MV-90 SYSTEMS

I. Master Station Hardware - The following hardware is considered a minimum requirement to support a modest MV-90 collection system (may not meet Duquesne's needs):

| Item | Model | Description | Quantity |
|---|---|---|---|
| 1 | Fileserver | Compaq ProLiant 2<br>0, 6/200H, Model IS, 160 MB RAM, 3.2GB Hard Drives, RAID Array Controller,<br>Color Monitor, CD ROM, (2) 10/100 ENET Cards | 1 |
| 2 | TapeDrive | Compaq 4/16 GB Tape Drive, Cheyenne Arcserver for NT, Single Server, (10)<br>4GB Tapes/Tape Cleaning | 1 |
| 3 | NT | MS NT Server, V4.0, 100 User | 1 |
| 4 | | Octopus with Super Automatic Switchover, (2) 3COM 10/100 Cards | 1 |
| 5 | | (2) 3COM SuperStack II Switch, (2) 100TX Ports, (64) 10TX Ports | 1 |
| 6 | Client Workstation | Compaq Deskpro 2000, 5/133, 16 MB RAM, 1.2GB Hard Drive, Color Monitor,<br>3COM PCI 10/100 ENET Card | 3 |
| 7 | Printer | HP Laserjet 4V 600 x 600 DPI, 16PPM Printer | 1 |
| 8 | Cubix | Cubix System 1010 with 64 Processors, 32 MB RAM, 500MB Local Drives | |
| | | Primary Site Hardware | Required |
| | | Backup Site Hardware | Recommended |

II. Higher Capacity - The following enhanced hardware options are provided to support higher level operations and the STAR Data Management System, and may be required to meet Duquesne's needs:

| Item | Model | Description | Recommended Quantity |
|---|---|---|---|
| Option 1 | 8200 | DEC Alpha - Mid-Range System (Main and Backup Site) | 2 |
| Option 2 | 8400 | DEC Alpha - High End System (Main and Backup Site) | 2 |

III. Local Data Server - The hardware for the Local Data Server will run MV-90 in a stand-alone NT based computer or on an NT LAN based system. The following hardware is recommended for the Local Data Server:

| Item | Model | Description |
|---|---|---|
| 1 | | Micron 4100 Magnum Computer, Intel 66MHZ-DX2<br>Processor, 2X EISA CD-ROM Drive, Windows NT, 32MB<br>RAM, 540MB IDE Hard Drive, 14" Micron Monitor |
| 2 | 3COM | Ethernet Card 16 Bit ISA, Ethernet Cable |
| 3 | HP LaserJet | 4V 600 x 600 DPI Resolution, 16PPM Printer |

IV. Terminal Servers (Meters) - Terminal Servers are used to connect meters to a digital communications network. Terminal Servers convert TCP/IP from the communications network into RS-232 for communication with meters. Terminal Servers can support from 1 to 32 serial ports with a single connection to the communications network.

The Terminal Servers recommended by UTS include the following:

| Black Box Terminal Server | Description |
|---|---|
| 1-Port<br>4-Port<br>8-Port | Operating Temperature Range: 32F to 113F<br>Relative Humidity: 90% Non-Condensing<br>Ports: RS-232 (50 Feet) |

| Xyplex Terminal Server | Description |
|---|---|
| 8-Port<br>20-Port<br>40-Port | Operating Temperature Range: 32F to 113F<br>Relative Humidity: 90% Non-Condensing<br>Ports: RS-423 (Extended Distance) |

V. Modems - Modems are used to connect meters to telephone lines or other communications mediums for in-bound or out-bound communications. All modems must be Hayes compatible.

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Note: A final decision on Duquesne's MV-90 system requirements, and resulting equipment deliverables, will be made once all applications and interfaces have been evaluated. Required hardware will be delivered by Contractor in time to support the milestone date for MV-90 operation shown on Schedule J. (See also MV-90 Reference Guide for operating requirements.)

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FIGURE 4-1

## 5. IMPLEMENTATION/INSTALLATION TOOLSETS

### 5.1 Description

This section describes implementation tools and software components that enable the Contractor to automate the installation of ERT Meter Modules and Cell Control Units, transitional and migratory reading mechanisms, as well as backup reading systems if portions of the network are not operational. The following installation toolsets (ReadOne Pro handheld units, ReadOne Link, ERTInstall) and progressing to other reading systems (OMR/Premierplus, and MAMR) shall be used under this Agreement.

### 5.2 Electronic Data Interface (EDI)/ReadOne System

ReadOne Link and ERTInstall system software packages are installation tools that shall be provided to the installation crews and made available to Duquesne as appropriate under the Services Agreement. These software systems are summarized and described briefly as follows:

#### 5.2.1 ReadOne Pro Units

The ReadOne Pro Unit is a handheld data terminal used to install, program and investigate ERT Meter Modules. When used in conjunction with ReadOne Link Software, it electronically routes the installer and captures all ERT module and meter installation information. In addition to capturing all required information, the ReadOne Pro ensures every installation follows the same procedure and that the ERT module is fully functional at the time of installation. The ReadOne Pro transfers all installation data to the ReadOne Link software for reporting and electronic transfer to the utility customer information system. The Contractor shall provide electronic transfer and automatic updating of Duquesne's customer information system directly from the field installation data captured in the ReadOne Pro which greatly improves overall effectiveness by eliminating all manual processes.

The installation crews shall be provided ReadOne Pro handheld units by the Contractor, for the installation of the ERT Meter Modules. During the installation for the service area, Duquesne shall be provided * units for installation efforts and oversight activities.

#### 5.2.2 ReadOne Link System Software

Contractor shall use ReadOne Link (R1LINK) Software or similar proven PC-based software and designed to streamline the process of implementing the ERT meter modules for automatic meter reading systems. Used in conjunction with ReadOne Pro Units, ReadOne Link Software shall provide computerized scheduling, routing, data transfer to and from the ReadOne Pro, processing of mainframe files and management reporting.

ReadOne Link Software schedules, loads and unloads ERT Meter Module installation work orders from the ReadOne Pro Installer Handheld. This software effectively manages the entire ERT meter module installation process. It provides an efficient work station for scheduling appointments for installation work orders, managing labor resource allocation and electronically transferring completed work orders from the ReadOne Pro Installer Handhelds to the utility's customer information system.

5.2.3 ERTInstall Software

Contractor shall provide proven ERTInstall software to automate programming of the ERT module in a meter manufacturer or utility shop environment. The ERTInstall application shall eliminate all manual programming by controlling operation of the ReadOne Pro unit through a personal computer and bar code scanner. Additionally, ERTInstall provides electronic records of all programming data as well as the ERT identification and meter number pairings for updating Duquesne's customer information and meter history system.

5.3 Alternative Data Collection Capabilities

Contractor shall provide Offsite Meter Reading (OMR) and Mobile Automated Meter Reading (MAMR) systems as alternative meter reading mechanisms for those areas that the fixed network is not economically feasible. These systems shall also provide a backup system in the catastrophic event that the fixed network system becomes non-operational.

5.3.1 Offsite Meter Reading (OMR) System

The OMR meter reading system shall combine the use of handheld computers (typically DataCap H or FS/2) and software packages for personal computers (Premierplus) or mainframe-based systems (Integrator). OMR shall consist of manual electronic data collection with the capability to communicate remotely to individual ERT Meter Modules via radio. Duquesne shall be provided * units for normal review and oversight activities.

5.3.2 Mobile Automated Meter Reading (MAMR) System

The Mobile AMR System shall utilize radio communication which has been integrated into a mobile unit operating from a utility vehicle, to remotely communicate with the ERT Meter Modules. DCLINK and DCU System Software packages are examples of the primary software applications associated with the MAMR system.

5.3.3 DataCommand Link System Software

DataCommand Link (DCLINK) software is the personal computer based interface software that receives files from the mainframe billing system or Premierplus, creates route diskettes for the DataCommand Unit in the van for the MAMR system. This software shall accept the completed route diskettes from the van system and create files for the billing system.

DataCommand Link Software provides the necessary "link" in a MAMR System between the utility billing computer and the DataCommand Unit. This data collection software is a PC-based software which enables meter reading and route information to be transferred between the data collection devices and the utility's billing computer. Working together, the utility billing computer, DataCommand Link Software, and the DataCommand Unit perform a complete meter reading and customer billing process.

5.3.4 DCU System Software

The DataCommand Unit system is the van based software that transmits a wake-up signal to the ERT Meter Modules, receives the ERT readings, and writes the appropriate information in a database based on the route diskette created by DCLINK.

The DCU system software controls the transmitter controller, receiver controller, and the system control unit (a touch sensitive operator interface display from which the DCU operator starts and stops the DCU and monitors system performance). The DCU also maintains route-related meter reading statistics and provides on-going operating status information to the DCU operator, stores readings received from the receiver/controller, and formats data collected so that it can be transferred to the DCLINK computer.

5.3.5 DataCommand Units (DCU)

At least * DCUs shall be utilized at Duquesne for reading the installed ERT Meter Modules using Contractor provided vehicles. Initially, two DCUs are required for reading the Pittsburgh area, with additional numbers available for backup purposes. However, if the need increases, subsequent DCUs shall be provided.

The DataCommand Unit (DCU) is a mobile data collection device which requests, receives and stores ERT Meter Module data. It consists of a radio transmitter, 48 radio receivers and a microcomputer all housed in a single cabinet which is mounted in a vehicle. The DataCommand Unit (DCU) "reads" the ERT Meter Module using radio frequency technology. In simple terms, it collects, organizes and prepares information transmitted by the ERT Meter Module for billing use at the utility.

A single antenna is used to transmit the "wake-up" signal and to receive the incoming ERT Meter Module transmissions. The ability to transmit and receive using the same antenna is accomplished using standard RF duplexing equipment. The "wake-up" transmitter operates on a primary radio frequency around * . The specific frequency is assigned to each utility by the Federal Communications Commission (FCC). When operating, the transmitter is run continuously with a power output of five watts. The primary frequency carries a specific tone to only "wake up" the desired ERT Meter Modules.

The RF splitter converts a single incoming channel into 48 separate channels, one channel for each of the 48 microprocessor-controlled receivers. As an ERT Meter Module transmission is received, the splitter "funnels" the transmission to the appropriate receiver.

The receiver converts the analog signal to its digital equivalent and checks the validity of the data received (using the CRC data transmitted by the ERT meter module). If the received data is valid, the receiver retains the message in a buffer until it is requested by the controller. The controller performs several functions. Primarily it "polls" the 48 receivers for ERT Meter Module messages, eliminates redundant messages, and passes the ERT Meter Module messages to the data acquisition microcomputer.

The DataCommand Unit (DCU) controls the activities of the entire system. Through the various peripherals connected to the DCU, it performs the following tasks:

Controls the operator interface (touch-sensitive display).

Allows loading of route information (using removable magnetic media).

Controls activation and de-activation of the wake-up transmitter.

Starts and stops the controller software.

Receives ERT Meter Module messages from the controller.

Stores unique ERT Meter Module messages in non-volatile storage.

Allows unloading of meter reading data at the end of a route (using removable magnetic media).

## 6. SYSTEM INTERFACES AND ACCEPTANCE

Throughout the term of this Agreement, Duquesne shall perform routine and ongoing system testing to verify continuing system performance and ensure that contracted services and related performance standards are met. The Duquesne Test Plan identified as Schedule F of the Services Agreement shall be developed and refined during Phases I and II of the project to address installation requirements and prepare for final acceptance testing in accordance with Article IV of the Agreement.

### 6.1 Information Systems and Services

The system database is the relational database connecting the GIHP real-time relational database and polling engine with Duquesne Information systems. This will require Duquesne's services supporting the implementation of the system database, the associated Contractor provided applications, modifications and enhancements to existing Duquesne information systems, and interfaces between the Contractor applications and Duquesne applications. The Contractor is responsible for the development, conversion, implementation, and appropriate ongoing maintenance of these information systems. The services to be provided by the Contractor are categorized below:

Implementation, operations and maintenance of the GIHP and MV-90 system databases. Daily reads processing, billing interfaces, and interfaces to other Duquesne systems and databases, as generally reflected in the high level system data flow documentation submitted per Schedule J.

Development, implementation, and ongoing maintenance of the Genesis Fixed Network and MV-90 System Applications.

Development and implementation services for Duquesne Information System (DISCuS) Modifications, Enhancements, and Interfaces as described in Section 6.1.3.

#### 6.1.1 System Database

Hardware:
Contractor shall provide two (2) IBM RS/6000 processors or equivalent compatible devices and related hardware required to support the system database, including * of data storage, and hardware required for connection to Duquesne's computer systems pursuant to the Agreement. Contractor is also required to maintain this hardware.

Software:
Contractor shall provide all required software for the system database including AIX, and any communication software required to interface to Duquesne's computer systems. Contractor shall also provide the Oracle database and related software required to support

* concurrent users attached via network attached workstations. Contractor is also required to obtain maintenance support for, or otherwise maintain, this software.

Database Support:
Contractor shall provide all database support required to install, operate, and maintain the system database. This includes performance tuning and database restart, backup, and recovery.

Security:
Contractor shall provide under Duquesne's direction secured access to the system production database in accordance with Duquesne's corporate data security policy and interfaced with Duquesne internal security environment.

Disaster Recovery:
Contractor shall provide disaster recovery support for the system database in the event of a disaster. This will be further defined during the deployment phase (Phase II).

Help Desk:
Contractor shall provide help desk support for the system database and interface this support to Duquesne's MIS help desk. Duquesne's MIS help desk will supply primary (Level 1) support for all user applications.

Operations:
Contractor shall provide all required operations support for the system database. This support includes, startup, shutdown, problem determination and resolution, backup and recovery, job scheduling, output distribution, and systems management. This support shall be provided 24 hours a day 7 days a week. It is understood that Contractor's system support operations cannot be unilaterally performed without Duquesne's knowledge and prior preparation. Accordingly, such activities will be completed on scheduled time periods that are mutually agreed on by both parties.

Performance:
The Contractor shall provide * response time for standard queries for individual record requests to the system production or static databases for data access for
* imultaneous users and provide 24 hour by 7 day access.

Test Facility:
The Contractor shall provide a system including hardware, software, and test data for ongoing testing of changes to the system production database and related applications. Software changes will be tested by Contractor and coordinated by Duquesne in a timely manner.

6.1.2 System Applications

The Contractor shall provide system applications, interfaces, data synchronization and related implementation and maintenance services for the following applications: These applications are further defined in Schedule B of the Agreement.

Consumption Metering, Including Demand
Residential Time-of-Use (TOU)
Load Profile (Interval Data), All Customer Classes
Tamper Monitoring and Reporting

Real-Time Pricing (RTP), Fixed Network and MV-90 Accounts Virtual Connect/Disconnect Outage Detection / Restoration Reporting Daily Reads Processing Capability Management Reports as Defined Herein On-Request Reads Creation of Groups Group Consolidated Consumption Metering Group Time-of-Use (TOU) Group Load Profile
* Interfaces
MV-90 Interfaces to GIHP, DISCuS, ST-33 System, Power Billing System, and Data Warehouse Billing, Daily Reads Interfaces DCI Sentry Applications, Including Load Profile, TOU, On-Request Reads

The Contractor shall deliver application software with user documentation; provide licenses for use of the application software by Duquesne employees or agents; assist with the installation and testing of the application software; verify functionality with Duquesne data; provide initial trainer training and help desk services; provide maintenance releases of the application software; test and implement releases; and provide problem management and resolution services. In some cases, such as ST-30 or Power Billing System implementation, specific, customized interface development requirements will be funded through the Software Development Fund.

6.1.3 Duquesne Information System Modifications, Enhancements and Interfaces

To fully utilize the potential of the GIHP and MV-90 system databases, a number of modifications, enhancements, and interfaces to Duquesne's Information systems have been identified. These have been categorized and generally described under the Functional Support Requirements in the following Subsections:

The services and the costs of developing and implementing these proposed modifications, enhancements, and interfaces shall be included in the monthly fee for the duration of the contract. Recognizing that, at this time, the specifications for these services cannot be adequately defined and incorporated into the scope of work, the final determination of the specifications and scope of the modifications, enhancements, and interfaces shall be determined through the course of the system implementation. A Software Development Fund of * shall be provided by Contractor for these modifications, enhancements, interfaces and license requirements. Contractor shall provide for these modifications, enhancements, and interfaces by either directly providing the services or by reimbursing Duquesne's MIS Unit for completing the service. The decision on who is to complete the work and the allocation of funds shall be determined through the following process:

1. Duquesne shall determine when a modification, enhancement, or interface is required and shall request in writing that a specification/scoping be prepared. The Request for Specification/Scoping shall include a description of the requirement, a business sponsor, from Duquesne, who can be contacted for clarification, and an indication of a required by date, if appropriate. All Requests for Specification/Scoping shall be authorized by the Duquesne Project Manager. The Request shall be provided to the Contractor Project Manager and Duquesne's DISCuS Information Systems Development (ISD) Director.

2. The Contractor Project Manager and the Duquesne DISCuS ISD Director shall cooperate in reviewing the request and agreeing on the business requirements, business and technical assumptions, and appropriate alternatives. Contractor and Duquesne's MIS Unit shall agree on a standard deliverable to document the Specification/Scoping. The deliverable shall include a description of the functional requirement, the technical requirements, any business or technical assumptions, constraints, dependencies, delivery dates, and any schedule impacts. The Contractor Project Manager and the DISCuS ISD Director shall independently provide Specification/Scoping deliverables with associated costing. Unless mutually agreed upon, the Specification/Scoping deliverables shall be provided within * of receipt of request. It is understood that some major deliverables may require more than * and the time period for these will be mutually agreed upon. The Specification/Scoping documents shall be authorized by the Contractor Project Manager and forwarded to the DISCuS ISD Director. The DISCuS ISD Director shall provide applicable specifications/scoping documents to Contractor Project Manager. The DISCuS ISD Director shall forward all Specification/Scoping documents to the Duquesne Project Manager.

3. The Duquesne Project Manager shall review the Specification/Scoping documents and determine whether to approve and which alternative(s) is/are selected. The selected alternative may be the Contractor submitted Specification/Scoping, the DISCuS submitted Specification/Scoping, or a combination of each. The Duquesne Project Manager shall notify the Contractor Project Manager and the DISCuS ISD Director of his decision in writing.

4. For the approved Specification/Scoping requests that are to be provided by Contractor, Contractor shall provide the full life cycle of developing and implementing the change in accordance with mutually agreed standards. The Development Budget shall be reduced by the amount of the fixed price provided in the Specification/Scoping document. Contractor shall comply with the specifications, the appropriate quality reviews by Duquesne, and the committed delivery date.

5. For the approved Specification/Scoping requests that are to be provided by ISD/DISCuS, ISD/DISCuS shall provide the full life cycle of developing and implementing the change in accordance with Duquesne Light standards. Contractor shall reimburse the Duquesne MIS Unit within one month of Duquesne's acceptance of the completed applicable work for the fixed price provided in the Specification/Scoping document. The Development Budget shall be reduced by the amount of the fixed price. ISD/DISCuS shall comply with the specifications and the committed delivery date.

6. Contractor and ISD/DISCuS shall coordinate activities and cooperate appropriately in the development and implementation of the approved changes. Some of the changes may be grouped for delivery, quality review, approval, and implementation. Contractor and ISD/DISCuS shall cooperate appropriately in identifying and resolving problems encountered throughout the development and implementation of the approved changes.

7. Duquesne shall determine when no further modifications, enhancements, and interfaces are required from Contractor. Duquesne shall notify Contractor when this occurs. Contractor shall appropriately reduce the monthly fee within one month to give credit for the unused balance remaining in the Development Budget.

8. The overall contract scope change provisions shall be utilized to address approved requests in excess of the Development Budget.

Functional Support Requirements:
The following Duquesne application system integration efforts are to be developed as mutually agreed and defined, based on approved timeframes by Duquesne and/or Contractor, to enable this technology to properly operate within Duquesne's Customer Information System environment (DISCuS). Each of the following topics pertains to DISCuS functionality that shall require modifications to allow the CaRS System to co-exist in a seamless manner and supply Duquesne and the Contractor with all of the necessary data to meet both parties operational needs.

Phase I (Initial Installation Period):

To install the Phase I meters on Duquesne's site requires basic systems functionality to be enhanced. These software enhancements to DISCuS include the following; which are provided by the Contractor.

Support installation of the Phase I customers through modifications to DISCuS service order processes and all other DISCuS applications as appropriate. (For example, fixed network notification, on demand reads, reading attempts screens).

Provide for new meter types, capabilities and/or attachments in DISCuS including interface with the 3rd party meter test board system as the need arises throughout the Term.

Provide the interfaces to the meter change out process that shall be utilized by the Contractor to replace the existing Duquesne meters with the new meters that shall contain the new Meter Modules.

Support the development of an interface to obtain the meter readings from the system production database to be utilized by DISCuS for customer consumption and billing.

Provide for the implementation of a data synchronization interface between the two systems to ensure that any changes/additions to Duquesne customer/premise base is properly reflected in the GIHP/MV-90 systems.

Modify the Duquesne DISCuS/Valuation & Property Records interface to properly reflect meter ownership.

Phase II (Billing and Transition to Fixed Network and MV-90 Operation):

Modify DISCuS to support the necessary changes to bill all customers properly with readings obtained from the CaRS system production database.

Modify DISCuS billing routines by eliminating route-based billing cycles.

Interface MV-90 system with DISCuS and Power Billing System functions for effective billing of commercial and industrial accounts with ABB Alpha PowerPlus end point devices.

Support the transition to the fixed network system environment and support a dual (manual and automated) environment to bill customers during the Phase II efforts.

Build interfaces and synchronization functions between the Duquesne and Contractor's systems for maintenance of Duquesne's metered accounts to ensure that the correct meter is recorded at a premise and that the measures that are being obtained are also defined properly in DISCuS.

Provide automated reporting processes to monitor the performance of the Contractor and evaluate the quality of Services.

Facilities Database:
Contractor shall provide and maintain a database

comprised of distribution system and fixed network components and their relationships. Contractor shall:

- Modify DISCuS to support the fixed network, MV-90 system and ABB PowerPlus software data components (event indications) that shall be integrated into the outage management functions of the complete network environment.

- Modify DISCuS and other applications (e.g. transformers, work management) to support the new business processes to maintain the distribution system and fixed network database.

- Provide an automated mechanism to support data collection for CCUs and other fixed network components that will be used to update the appropriate Duquesne asset information system.

Outage Automation:
Contractor shall integrate the outage detection or reporting capabilities provided by the fixed network and MV-90 (from ABB PowerPlus Alpha meters) with Duquesne's current or future Outage Analysis System (OAS) to support trouble management from notification to restoration. Contractor or Duquesne shall:

Modify DISCuS interface to accept outage detection from the system. Support both premise and device notification via the CCU, and develop the appropriate applications for outage analysis purposes required by Duquesne.

Provide data with which will enable the analysis functions within OAS to identify the probable failing distribution system component based on available outage detection information.

Through delivery of restoration data provide for closure of outage trouble orders when a service is restored and integrate restoration verification into the process.

Implement CCU * outage detection functions through the Genesis fixed network, and MV-90 outage reporting through use of the capabilities provided by the single and three phase ABB Alpha meters. Develop * or other interfaces as appropriate (see Schedule B Interface Priority List). Implement ABB PowerPlus software as necessary for effective system operation.

Provide an outage history database of * by premise for historical studies to support customer guarantees and to add new rates and inquiries that result after a significant outage is completed.

Contractor will provide * and DCI Sentry outage capability through the fixed network by * , consistent with performance of * as identified on Schedule J.

Virtual Customer Service Orders:
Contractor shall utilize data supplied by the fixed network or MV-90 to complete service orders that require readings. Contractor shall:

Integrate the system with Duquesne's automated field service system to provide readings for service orders.

Provide a mechanism to report possible unauthorized usage situations.

Develop interfaces between DISCuS service order subsystem and the fixed network to identify when a premise is in a physical shutoff state.

Provide for a new type of meter status in DISCuS to identify when a meter is in a "Virtual" off state.

New Meter Types:
Contractor shall provide the ability to configure meters to measure Demand and Time Of Use (TOU). Contractor shall:

Provide an interface into the fixed network to establish the reconfiguration of a current premise from one measure to another to allow Duquesne to meet the needs of a customer as their use of energy changes.

Provide demand, consumption, RTP, load profile and TOU data for customers requested by Duquesne with the calculation of the usage amounts being performed by the Contractor's system in a manner approved by Duquesne for use in DISCuS.

Provide other advanced services involving frequent reads as identified in appropriate sections of the Agreement. Use * , DCI Sentry, PowerPlus Alpha meters as appropriate to acquire the necessary data.

New Rate Offerings:
Contractor shall utilize the features of the fixed network and MV-90 applications to create new rate offerings for Duquesne's customers. Contractor shall:

Define and implement new rate structures in DISCuS to support various time-of-use and/or demand type consumption billing applications to be able to provide competitive alternatives to Duquesne's customers.

Provide necessary billing or other interfaces between DISCuS and the system database to support the new rate structures.

Implement the MV-90 Power Billing System to utilize customized or published commercial and industrial rates for C&I customers to support retail competition.

Provide the ability to reconcile customer energy usage from multiple suppliers as required in a competitive environment based on designed functionality provided via the MV-PBS Power Billing System, or modifications funded through the Software Development Fund.

New Billing Cycles:
Contractor shall provide the ability to permit customers to select their billing date. Contractor shall:

Develop the ability within DISCuS for customer-selected billing dates.

Develop an interface to ensure that the information related to cycle billing changes is current within the system and that readings are present to allow for a customer billing to take place that night.

Develop appropriate control processes to ensure that the maximum number of accounts to be billed is not exceeded for any given night.

Implement ability to adjust reading schedules to support billing of commercial and industrial customers through the MV-90 translation system.

New Customer Service GUI Interface:
Contractor or Duquesne shall develop a new marketing-oriented user interface for Duquesne that provides the user with appropriate information from DISCuS and the fixed network to better respond to customer inquiries and meet customer service requests as follows:

Support a GUI interface capability that supports access to all of the fixed network and MV-90 consumption and billing data and features, as well as access to DISCuS and data warehouse information and transactions.

Load Profile:
Contractor shall provide the ability to review and analyze load data at the premise, transformer or subsystem level. Contractor shall:

Create and maintain a required storage capability of load and customer information from the fixed network, MV-90 and DISCuS such that load profiles (interval data) can be provided for any customer in the distribution system. Historical load profile data will be retained for three years, within MV-90 or the customer data warehouse.

Provide a decision support environment for both standardized and adhoc type load profile analysis functions. Perform load research functions through MV-90.

Provide an interface for consumption and load profile data to the Power Billing and DISCuS billing systems.

Real-Time Pricing:

The UTS MV-90 real-time pricing package will be provided to meet the RTP provisions of the contract for three phase and large ( * and greater) single phase demand accounts which will be using the MV-90 system.

All necessary utility and customer interface software will be provided by Contractor and will be operational by * for accounts handled through the MV-90 system (three-phase, large single-phase, excludes * ). Contractor agrees to license the * MV-90 RTP customers at * . Contractor will provide standard MV-90 Read Only RTP software for Duquesne to distribute to their customers as necessary to support RTP with ABB PowerPlus Alpha Meters to be operational by * (see Schedule D).

Small single phase accounts (less than * ) using the * module will be capable of implementing RTP through MV-90 or via appropriate * connection for delivery of hourly reading data on a near real-time basis to an Internet server or similar interface by
* .

Standard consumption meter accounts will be converted at Duquesne's request to an RTP account as described above and will be capable of providing RTP data delivered on a near-real time basis by * by paying the incremental charge outlined in Schedule D.

Billing and database interfaces required to make use of RTP data for billing or other purposes will be provided by Contractor by the above implementation dates. RTP will deliver hourly reads on a near real-time basis via * or mutually agreed file transfer mechanism rather than the existing CBI or DRDB by * .

Meter Service Management:
Contractor shall provide a system to manage all maintenance activities at a customer's premise. Contractor shall:

Modify DISCuS to route appropriate service orders, both automated and paper, to the Contractor for disposition.

Provide reporting facility to monitor Contractor performance and customer satisfaction results to assure Contractor compliance to service levels.

Provide facility where the Contractor can transfer or refer the service order to Duquesne for disposition of request.

Provide all necessary interfaces to DISCuS to update customer files.

6.2 System Acceptance

Duquesne shall conduct acceptance testing in accordance with its Schedule F Test Plan which shall be finalized during Phases I and II. This Test Plan shall at a minimum include the following:

Spot checking of Routes during the installation period.

Route testing and system testing shall be conducted on a random and full system integration basis.

Route testing shall include individual Routes as well as higher level route summary data to ensure that performance standards outlined in Schedule L are capable of being met.

System testing shall include an evaluation of system network software, management information bases, and user applications software developed in accordance with the Agreement.

System testing shall include an evaluation of throughput capability, system speed and fill capacity, data accuracy and other parameters as necessary.

All functionality provided under the Agreement shall be tested under low and high volume conditions.

A parallel test comparison of the automated routes against the manual route results shall be conducted to verify system accuracy following the successful comparison, the reading of the route will be turned over to the automated meter reading systems.

Final system acceptance testing shall be conducted by Duquesne upon completion of Phase II. Contractor shall be notified, as described in the Agreement, of the results of this testing and of any Nonconformities that must be corrected prior to system

acceptance. All Nonconformances must be resolved within the Agreement schedule timetable.

Ongoing and continuing system testing shall be included in the Test Plan to ensure that system functionality and data acquisition remain at required standards throughout the term of the Agreement.

6.2.1 System Hardware Test

Testing the hardware usually consists of visually inspecting the equipment and running any standard hardware diagnostic programs. Other tests may be developed during Phases I and II.

6.2.2 System Software Test

Every software function shall be investigated and proven to be operating as per the documented specifications and user guides. Software components to be tested include all network application software, SQL application software, CCU application software and network management software

6.2.3 Variances and Problem Trackers

Variances are unexpected conditions experienced during the system acceptance testing and system operations. Software, hardware, and documentation problems can be reported, and they may or may not indicate legitimate System problems. System variances and problem trackers are reported and tracked by The Contractor utilizing a Central Problem Tracking (CPT) mechanism to classify, track, describe, document, and address the reported condition. This mechanism is primarily utilized by the Customer Support Center. CPT trouble data from the tracking system shall be provided to Duquesne on a regular and periodic basis to enable Duquesne to be aware of any outstanding problems and the current status.

When variances or problems requiring correction have been resolved, the process is noted in the problem tracker log, where it is archived for future reference. Appropriate releases and adjustments are made based on the nature of the issue.

6.2.4 Problem Resolution and Escalation Policy

The Contractor's Problem Resolution and Escalation Policy serves to categorize issues according to severity, match levels of severity with the appropriate response, and define actions to be taken if resolution is not achieved within appropriate time-frames. This system will be used internal to the Contractor to provide Nonconformity monitoring. However, all handling of Nonconformities arising out of the Certification, Acceptance or Final System Testing will be handled in accordance with Schedule F of the Agreement.

6.3 Certification Testing

Beginning with the Initial Notice, Contractor shall conduct certification testing for each converted Route and shall include in its plan the following:

A Certification Notice shall be provided to Duquesne upon completion of the Route testing.

Duquesne shall be notified in advance of such testing and shall be permitted to observe this testing on a spot basis.

A weekly report shall be provided to Duquesne showing completed Routes, test results, and related Nonconformities.

The Certification Notice shall certify that the Route has been accepted and meets the acceptance criteria set forth in Schedule F of the Agreement.

Phase I Nonconformities shall be resolved within the time period specifications described in the Agreement.

Phase II Nonconformities shall be handled in accordance with the acceptance testing provisions prescribed in the Agreement.

Duquesne shall have at least * notice of Route Certification Testing to provide an opportunity for spot checking or otherwise observe the Contractor testing process. As the fixed network installation advances, Duquesne shall observe as deemed necessary the communication of network devices with higher levels and the recording of data in the GIHP or Oracle data warehouse.

# 7. SYSTEM OPERATION, SUPPORT, AND MAINTENANCE

The Contractor shall provide proven procedures, tools, and techniques for implementing, operating, supporting, and managing large automated data acquisition systems and providing user support. The sections that follow outline the basic components that shall be followed for the delivery of services requested by Duquesne, including operations, training and mainframe functions associated with the fixed network.

## 7.1 System Operations

System operations includes several areas of involvement principally involving the ongoing service work associated with a services agreement. Secondary, although no less important, are the routine support mechanisms that accompany daily operations.

### 7.1.1 Operations Center

The Operations Center is the central area where the service work takes place and includes the physical location of the computer systems for the fixed network, the interface to the installation computers (ReadOne system), and alternative/backup meter reading systems (e.g. Premierplus OMR and DCLink/MAMR). The Contractor shall establish this Center in accordance with Schedule J.

At this location connections to the Duquesne mainframe shall be available for interface to the Oracle relational database (for billing interfaces and client applications). Likewise, connections shall be available for the ReadOne Link application for installation activities.

The proposed computer facility shall fill the Operations Center needs based on preliminary site surveys. It is assumed that the existing facility infrastructure, including heating/cooling, UPS, communications connections, physical security, etc. shall remain intact for the Operations Center. This Center shall be staffed with the Contractor's personnel to monitor and maintain the fixed network, conduct daily activities, for system maintenance functions, etc.

### 7.1.2 Operations - Daily Activities

The Contractor shall provide daily monitoring of the fixed network to verify correct operational efficiencies are taking place, verifying performance needs, diagnosing system faults, and identifying maintenance needs. The Contractor shall provide experienced, trained personnel to perform the following operational functions:

Initialize, monitor, and control the fixed network.

Operate and sustain communication links (excluding links provided by Duquesne such as trunk radio) between PowerPlus Alpha meters and the MV-90 head end system. Maintain MV-90 hardware and software.

Execute standard operating procedures at scheduled times.

React to exceptional conditions and maintenance needs.

Conduct component maintenance functions.

Provide configuration support.

Conduct appropriate backup, storage, and diagnostic functions in close coordination with Duquesne.

Recover from system failures.

Create problem reports for all exceptional conditions.

Execute notification and escalation procedures for exceptional conditions.

Collect and store appropriate documentation.

Duquesne shall have the ability to request * (or more frequent) reads, typically in a batched manner for efficiency but not a requirement, to the Oracle database for billing purposes. On request reads and other application capabilities are defined previously in the software applications section.

Operation of the alternative meter reading systems shall take place by the Contractor operations personnel, who will also dispatch maintenance and installation crews for ERT and CCU components.

The Contractor operations group shall interface with the Contractor's customer service and support personnel to ensure that all Duquesne customer service policies and procedures are fully supported.

7.1.3 Customer Service and Support

Duquesne level one help desk personnel shall interface with Contractor's customer service organization in Pittsburgh during working hours for the initial operational phases. For additional support, the Contractor support representative shall contact the main Contractor support services organization (Customer Support Center) as appropriate to continue efficient system operations for Duquesne.

The Contractor shall also maintain an experienced staff in the Customer Support Center based in Spokane, WA. This center shall provide 24-hour, 7-day per week service accessibility. The office is currently staffed from 6:00 a.m. to 6:00 p.m. (PST), Monday through Friday, with migration strategies in place to staff the center 24 hours a day. If emergencies arise outside of staffed hours, calls are received by an answering service which connects them directly with a Customer Support Analyst. In all cases, problem trackers, Nonconformities, performance deficiencies and any other problem arising through operation of the network shall be handled on a basis that meets the requirements of the Agreement.

## 7.2 System Maintenance

### 7.2.1 Field Investigations

The Contractor shall dispatch appropriate Contractor or sub-contract personnel to investigate any suspect fixed network component not located on customer premises (i.e.: CCUs, NCNs), and will take the necessary action to ensure that acceptable system operability is maintained. The results of such investigations may be to repair, replace or add additional system components to ensure acceptable performance levels are maintained.

### 7.2.2 De-installs and Re-installs

The Contractor shall provide all personnel, equipment, tools, and consumable supplies (wire, hardware, etc.) necessary for de-installation and re-installation of ERT Meter Modules, * , DCI Sentry devices and Meters requiring service. In addition, all new services requiring meters will have Meters and Meter Modules installed by the Contractor.

### 7.2.3 Equipment Maintenance

Contractor shall provide corrective services for the covered components listed in the Agreement and any other system components that require servicing and affect the services provided under the Agreement. Corrective services shall be provided during regular hours at the Contractor's servicing location with consideration to the appropriate "return times" to be identified based on individual component need and in conformance with all published Service Procedures. Upon receiving equipment at the servicing location, the Contractor shall complete all corrective maintenance services necessary to return the equipment to the original operating specifications, excluding minor cosmetic deficiencies.

In addition, the covered components returned for corrective services shall receive preventive maintenance service. Preventive maintenance service includes complete functional testing, upgrades, replacement of defective or suspect components, and a final functional test. In all cases, equipment maintained by Contractor shall be expected to operate in a manner that meets the service levels established in the Agreement.

### 7.2.4 Related Documentation

The Contractor shall provide applicable operations and service publications as necessary to support the fixed network and MV-90 systems and meet the requirements of the Agreement, including hardware and software components. Procedures and specifications for product modifications and upgrades shall be furnished as they become available. Engineering blue prints, source code, proprietary protocols, and additional Contractor technical documents considered necessary for operation and maintenance of the fixed network and MV-90 shall be furnished as part of this Agreement except as provided for within the Agreement.

### 7.2.5 Technical Library

The Contractor shall maintain a single Technical Library at it's servicing location for storage and maintenance of all related Fixed Network and MV-90

system Agreements, back-up software, operators manuals, service manuals, engineering change orders (ECOs), specifications, service bulletins and reports associated with installation, operation, maintenance and administration. Duquesne agrees that all related technical documents and data generated internally shall be cataloged and maintained as part of the Library per the Contractor's request, and listed in the Technical Library. Unless specifically identified as "Public Information", the Contractor and all parties to this Agreement shall consider cataloged materials maintained in the Technical Library to be proprietary in nature, and agree not to copy or distribute materials, documents, or software to any third parties for any reason without prior written consent from affected parties.

## 7.3 Personnel Certification

Personnel certification ensures that everyone who is using the fixed network or MV-90 applications has received the same consistent training as well as attained the same level of knowledge that enables Duquesne and the Contractor to run the systems more effectively, efficiently, and reduce the cost in terms of retraining, and most important, not getting the most from the system that you can.

Certification shall be performed through a series of courses and exams that test the knowledge that should be gained from the course. The exam shall be administered by the Contractor or a neutral third-party. There may be some occasions when the exam shall be administered at the conclusion of the course. The acceptable passing mark is * with the exception of SNMP which is
* .

Upon completion of applicable training courses, employees shall be deemed certified for the appropriate engineering, installation, operation, or maintenance job functions. Individuals will be certified for back-up responsibility in the event a position should unexpectedly become vacant. Certified employees shall qualify for all applicable engineering, installation, operation, and maintenance support services as identified. Personnel not holding applicable certification(s) shall be required to be enrolled in future training class to be able to support the systems.

## 7.4 Disaster Recovery and Backup Plans

The Contractor understands that having metering data is critical to Duquesne Lights financial operations. However, complete and detailed disaster recovery and backup plans for the fixed network and MV-90 implementation will not be completed until the end of Phase II. The Contractor shall work with Duquesne during Phases I and II to completely define the disaster recovery and backup needs.

### 7.4.1 Approaches and Responsibilities

Approaches to disaster recovery can vary according to a number of criteria. A single GIHP or MV-90 server can be backed up by another comparable unit in another building or site. A large grouping however, requires a suitable, redundant system at an off-site location, or subscription to a specialized disaster recovery hot site. In all cases, suitable backup provisions shall be provided to meet the backup plan approved by Duquesne.

The Contractor shall work with Duquesne project management to define the following disaster recovery responsibilities:

Work with Duquesne personnel to identify critical applications and time frames.

Negotiate for rapid delivery purchase orders with key Subcontractors and provide sufficient inventories of materials and components on-site.

Ensure that hot-site contracts, if applicable, provide sufficient resources for processing critical work.

Ensure that proper backup procedures are being followed and off-site storage of critical data is accomplished.

Collect, organize, and periodically review the disaster recovery documentation.

Coordinate and document results of disaster

recovery tests.

Provide an Incident Report for each occasion that the Disaster Recovery Plan is implemented.

7.4.2 Disaster Avoidance and Recovery

The Contractor agrees that the GIHP and MV-90 database servers shall have disaster recovery and backup capability. Data on local computer disks (Duquesne application users) are the responsibility of the user unless provided under the services listed in Section 6 of this Description of Work. Disaster recovery and backup plans shall be pro-active in nature to prevent loss of critical data. Therefore, several approaches should be addressed:

Disaster Avoidance:

Network topology and configurations such as alternate path routing, designed to minimize single point failure.

Designated disaster recovery teams to ensure valid, realistic procedures are in place for network emergencies.

Annual testing of the actual recovery capability performed on a scheduled basis on a sample number of meters * .

Disaster Control:

Modular components used to enable hot swapping of inoperative sub-components.

Market and standards-based products recommended to ensure rapid access to spares, trained personnel, and facilities at disaster recovery locations.

Maintain an appropriate number of key system components on-site for rapid replacement.

Disaster Recovery:

Automated diagnostic systems and network controllers that provide disaster recovery capability and constant surveillance during an identified disaster recovery situation.

Disaster recovery needs and network configurations that have been individually identified for each utility's organization, location, and system.

Since the final components of any Disaster Recovery and Backup Plan are unique to the utility implementing the plan, the development of a suitable plan must be accomplished over time as the system is installed. The Contractor agrees that this plan will be developed and approved by Duquesne during Phases I and II.

## 7.5 Duquesne's Training Needs and Deliverables

### 7.5.1 Needs Analysis

The Contractor shall work with Duquesne to gain an understanding of the skill levels that currently exist in their organization as well as the skill levels that they want to exist in their organization for the cooperative operations of the fixed network. This analysis of Duquesne's needs shall provide the Contractor with the opportunity to work jointly to make the determination as to where to begin curriculum paths for the personnel who are going to work with the fixed network system. Likewise, an analysis of The Contractor's needs shall provide Duquesne Light with the opportunity to tailor training and curriculum paths for the Contractor personnel involved with Duquesne's systems.

### 7.5.2 Training

The Contractor has focused its customer training on three distinct groups of participants: participants from an Information Systems (IS) Department, Engineering, and Customer Service Representatives (CSRs). Each group of participants shall participate in training that is dedicated to ensuring their success in using the fixed network system.

The Contractor believes that for the fixed network and MV-90 systems to run effectively and efficiently people need to have certain knowledge, skills, and abilities. The Contractor has adopted a certification approach based upon the participant's needs. The levels coincide with four different levels: novice, proficient, expert, and master. The differentiation in the levels is to ensure that everyone understands that they do not need every course or become a master in order to succeed with the fixed network system for their position. The Contractor encourages Duquesne Light to have an on-site master or an expert who works closely with a master from the Contractor. The master provides the training and undergoes a rigorous train the trainer program in addition to being an expert in a particular subject matter area. The definitions of each level are as follows:

Novice - has no knowledge of the subject matter area. Requires an overall conceptual understanding of information focusing on terminology, definitions, and minimal use of the system. Most managers shall take these courses to afford them the opportunity to have a clearer understanding of how the overall system works from a high-level overview. Focuses on knowledge and comprehension levels of Bloom's Taxonomy (an educational philosophy that differentiates between knowledge/comprehension and synthesis/evaluation levels of learning).

Proficient - has little previous knowledge of the subject matter area. Begins to gain an understanding at the application and synthesis levels. Has the ability to begin using the system and performing lower complex tasks such as recognizing that there is a problem within the system.

Expert - has extensive experience, knowledge, and skills set. Knows several areas `inside and out'. Has the ability to diagnose as well as troubleshoot and fix the problems within the system. Has the knowledge to show others how to fix problems using `shortcuts'. Understands the overall working of the system as well as being technically deep in one particular area. If the person doesn't know the answer to the question, they know where to go in order to find it. This person performs at the evaluation and judgment levels. Usually has a great deal of hands-on experience as well as conceptual and theoretical knowledge.

Master - the major difference between the expert and master levels is that the master has the ability to train others on the various aspects of the system. The master has excellent verbal and written communication skills as well as good interpersonal skills that enables them to perform as an outstanding trainer and coach. The master works in conjunction with the expert in order to rely upon someone else for technical assistance in a particular area. The master has taken a few more classes as well as completed a train-the-trainer program that focuses on offering excellent technical training for all levels of the organization.

The above description of training requirements and levels is typical of the training effort required to ensure successful operation of the system. This program will be made available to Duquesne, and shall be consistent with Prudent Utility Practices and submitted to Duquesne for review and comment. In addition, any other training requirements, documentation, manuals, etc. will be provided by the Contractor if requested by Duquesne.

## 8. DELIVERABLES

The following listing of deliverables as listed on Schedule N of the Agreement is intended to be representative of the materials that will be provided by the Contractor at appropriate time periods under the Agreement. This listing is not considered all inclusive and any other deliverables identified on Schedule N shall also be provided.

### 8.1 List of Deliverables - CONTRACTOR

1. System Overview Documentation
   All of the documentation that provides initial overview information of the system software components, system hardware components, and implementation activities.

2. System Data Definitions and File Layouts
   The file layouts necessary for the transfer of data between the mainframe and the SQL databases.

3. Project Plan, Initial
   The initial project plan contains all sections of a plan as outlined by the Metzger text "Managing a Programming Project". This version of the plan is generally considered to be about
   * accurate.

4. Project Plan, Updated
   The second version of the project plan is an expansion of the initial version using the information gathered in the System Definition Phase. This version of the plan is generally considered to be about * accurate.

5. Project Plan, Final
   The final revision of the project plan is an expansion of the second version using the information gathered in the System Definition and System Development Phases. This version of the plan is generally considered to be about * accurate.

6. ReadOne Pro Design
   Describes the utility specific adjustments and customizations to the standard ReadOne Pro (ROCL) application for the ReadOne Pro handheld unit.

7. Implementation Plan
   The plan that contains all specific activities for Duquesne and Contractor in the implementation of the MAMR system.

8. DC_LINK Users Manual
   Details the operational procedures of the DataCommand Link application software to allow an operator to perform the tasks associated with the PC operations of the MAMR system.

9. ReadOne Pro Users Manual
   Details the operational procedures of the ReadOne Pro handheld unit to allow an installer to program and verify the ERT module installation.

10. ERT/ * /DCI Sentry Meter Installation Manuals
    Provides operational procedures for the changeout to ERT, * , DCI Sentry devices for electric meters in the field (see also Note 7).

11. Electric ERT Module Retrofit Manual
Provides operational procedures for retrofitting meters with electric ERT modules with the meter shop. The procedures shall encompass installation of the ERT retrofit module, installation of a meter Bar Code label and meter accuracy testing.

12. System Acceptance Plan
This is a high level document that discussed the testing and acceptance conditions relating to the Fixed Network AMR system.

13. ReadOne Pro Application
The ReadOne Pro functionality necessary for the implementation and maintenance of the MAMR system, as well as the installation of the ERT modules.

14. DC_LINK
Provides all DataCommand Link application functionality necessary for PC operations in the MAMR system. The application functionality is detailed in the DC_LINK Users Manual.

15. DCU
Provides all DCU functionality necessary for data collection of ERT module readings. The application functionality is detailed in the DCU Operators Manual.

16. Carbon Copy Plus or PROCOMM Plus
Provides remote communication capabilities for Contractor support services and troubleshooting assistance. Contractor supplied, one package per PC office location, of Carbon Copy Plus or ProComm Plus.

17. Electric ERT Modules
Sufficient quantity of ERT Modules for installation in the field

18. ReadOne Pro units
Sufficient quantity of ReadOne Pro handheld units, for installation and verification of ERT modules in the field. These shall remain Contractor property, except for * provided to Duquesne.

19. ReadOne Pro Cradles
Sufficient quantity of ReadOne Pro cradles, one per PC per office. These shall remain Contractor property, except for * provided to Duquesne.

20. ABB Electronic Alpha Meters
Sufficient quantity of ABB Electronic PowerPlus Alpha meters equipped with Contractor fixed network or MV-90 Compatible Communication interface, outage event reporting, power quality reporting and load profile capability for field installation on single and three phase demand accounts.

21. Bar Code Label Printer
Sufficient Bar Code printer units for attaching meter identification Bar Code labels on all retrofitted electric ERT meters.

22. Cell Control Units (CCU)
Sufficient quantity of Cell Control Units for implementation of the Fixed Network and data collection from the ERT modules.

23. Network Control Nodes (NCN)
Sufficient quantity of Network Control Nodes for implementation of the Fixed Network and data collection from the ERT modules and CCUs.

24. Genesis Itron Host Processors (GIHP)
Sufficient quantity of Genesis Itron Host Processors for head end databases and applications for the fixed network and data collection from the ERT modules, CCUs, and NCNs. Hardware platforms shall be mutually agreeable, probably IBM RS6000 or DEC Alpha devices.

25. Personal Computer
One PC per office for ReadOne Link capabilities and DC_LINK applications; minimum specifications include:

> IBM PC AT, PS/2, or compatible 640 KB of RAM memory 20 MB hard disk drive 3.5" diskette drive Monitor and display adapter Serial mouse, if necessary Serial port for ReadOne Pro communications Parallel port for printer communications Printer, cabling, supplies PC DOS version 3.2 or greater File transfer communications board

26. Telecommunications Modems
Sufficient quantity of modems, Hayes compatible, for use with carbon copy and file transfer packages and for dial-up diagnostics of the fixed network, and appropriate modems for communication links with ABB PowerPlus Alpha meters and MV-90 head end system.

27. OMR Handheld Units
Provide up to * handheld units, new or upgraded, for monitoring and reviewing reading and service functions.

28. MV-90 Translation System Hardware and Functional Specification (Reference Guide) Provide head end equipment including modems and servers for operation of MV-90 for all three phase and large (transformer rated, * or greater) single phase accounts. Provide appropriate specifications or reference guide documents to support system implementation and operation.

29. MV-90 Documentation, Software and Licenses
Provide MV-90 documentation software and licensing rights supporting delivery of all applications as defined in the Agreement.

30. Communications Links
Provide communications to all single phase and three phase accounts as required within the Agreement.

8.2 List of Deliverables - DUQUESNE

1. ReadOne Pro Application Interface
   The ReadOne Pro interface functionality necessary for the implementation and maintenance of the AMR system, as well as the installation of the ERT Modules.

2. Carbon Copy Plus or PROCOMM Plus
   Provides remote communication capabilities for the Contractor support services and troubleshooting assistance. Utility supplied, one package per PC office location, of Carbon Copy Plus or ProComm Plus (if available).

3. File Transfer Package
   Provides communications between the mainframe and PC to allow transfer of data files for meter reading and DCU operations.

4. DISCuS Access
   Provides communications to the mainframe sessions for viewing and appropriate updating to the DISCuS sessions to The Contractor for installation and ongoing operations.

5. ReadOne Pro Units (If more than * are needed.)
   A specific quantity of ReadOne Pro handheld units, for installation and verification of ERT modules in the field.

6. ReadOne Pro Cradles (If more than * are needed.)
   Sufficient quantity of ReadOne Pro cradles, one PC peroffice.

7. Personal Computer
   One PC per office for ReadOne Link capabilities; minimum specifications include:

   IBM PC AT, PS/2, or compatible 640 KB of RAM memory 20 MB hard disk drive 3.5" diskette drive Monitor and display adapter Serial mouse, if necessary Serial port for ReadOne Pro communications Parallel port for printer communications Printer, cabling, supplies PC DOS version 3.2 or greater File transfer communications board

8. Telecommunications Modem
   Sufficient quantity of modems, Hayes compatible, for use with Carbon Copy and File Transfer packages.

9. Telecommunications Links
   Sufficient quantity of telecommunications links per PC for use with Carbon Copy and fixed network components. Provide trunk radio or other communication links as required for connection with the three phase accounts through MV-90 that are Duquesne's responsibility.

## 9. GENERAL NOTES

1. Advanced functionality will be provided only to those meters covered by the Fixed Network, or the MV-90 applications. Upon issuance of a general system specification, MV-90 will be integrated into, and become part of, the fixed network.

2. Polyphase/three-phase meters are read by MV-90 in accordance with the terms included in this Agreement.

3. The Words "Radio" or "Wireless" shall be deemed deleted prior to the words "Communication Network".

4. The Words "Certified Training" shall be deemed to mean "qualified training".

5. Terms such as URD, * , MV-90, GIHP, Fixed Network, CaRS, CBI, DRDB, CDPD, etc. have specific meanings that are defined in various sections of the Agreement.

6. For the purpose of describing a * in Schedule A, or elsewhere in the Agreement, the term * has been used to represent this device. All specific references to * are interpreted to mean the * , which is the official model designation.

7. References to DCI Sentry and * devices are attempts to identify specific types of end point devices that may provide ERT level or advanced ERT functionality. The appropriate end point device will be selected by Itron to meet the precise data collection requirement. All such devices are included under the defined term Meter Module in the Agreement.

REPLACEMENT SCHEDULE C

## SCHEDULE C

## PERMITS

1. Licenses will be required from Duquesne for attachment to poles, towers and fixtures owned by Duquesne.

2. Licenses or permits will be required from the City of Pittsburgh for attachments to street lights in the City of Pittsburgh.

3. Permits or licenses may be required for attachment to any poles, towers, fixtures or facilities not owned by Duquesne.

4. Work permits may be required from some municipalities for performing certain construction activities within their boundaries. Street opening permits may be required for digging or trenching activities in municipalities.

The above items represent the known permit requirements as of the date of execution of this Agreement. Contractor accepts responsibility for obtaining these and any other permits required for completion of the Work. Duquesne agrees to utilize best efforts to assign, facilitate or minimize the impact of permit requirements on Contractor's work and further agrees that if unforeseen permit requirements caused by new regulations significantly change or impact the price of the Work, the new requirements will be addressed through the change control process.

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SCHEDULE D

PRICE SCHEDULE

PHASE I

| | BASE PRICE |
|---|---|
| * | * |
| * | * |

PHASE II

| | BASE PRICE |
|---|---|
| * | * |
| * | * |
| * | * |
| * | * |

PHASE III

A. SERVICES

| | BASE PRICE (See Note 7) |
|---|---|
| As defined in the Agreement. | * |

B. EQUIPMENT LEASE

| | LEASE PRICE |
|---|---|
| Covering the Equipment as described in the Agreement. | * |

C. ADVANCED SERVICES

| | |
|---|---|
| * | * |

Notes:

1. Except as set forth herein and in the Agreement, * .

2. Monthly billing is calculated based on quantities as of the * .

3. The above prices cover all * provided under the Agreement as shown on * .

4. Advanced services will be billed at the * or the * .

5. * reads includes up to * reads can be obtained at up to * .

6. Customer Choice Option reads (readings recorded * will be billed at * per meter per month during the first three years of Phase III, and * per meter per month thereafter.

7. A * price reduction will be imposed on the monthly base price amount, once Phase III pricing is in effect, if certain Phase III milestones are missed (See Schedule J).

SCHEDULE E

BUYOUT SCHEDULE FOR CONVENIENCE

| (In Thousands of Dollars) | (1) New Meters | (2) Meter Modules | (3) Fixed Network | (4) Associated Services | Total |
|---|---|---|---|---|---|
| Phase II * | Pro rated | Pro rated | Pro rated | Pro rated | Pro rated |
| Phase III | | | | | |
| Year 0 | * | * | * | * | * |
| Year 1 | * | * | * | * | * |
| Year 2 | * | * | * | * | * |
| Year 3 | * | * | * | * | * |
| Year 4 | * | * | * | * | * |
| Year 5 | * | * | * | * | * |
| Year 6 | * | * | * | * | * |
| Year 7 | * | * | * | * | * |
| Year 8 | * | * | * | * | * |
| Year 9 | * | * | * | * | * |
| Year 10 | * | * | * | * | * |
| Year 11 | * | * | * | * | * |
| Year 12 | * | * | * | * | * |
| Year 13 | * | * | * | * | * |
| Year 14 | * | * | * | * | * |

* Total equipment purchased plus * fee for termination of services.

BUYOUT SCHEDULE FOR CAUSE

| (In Thousands of Dollars) | (1) New Meters | (2) Meter Modules | (3 Fixed Network | (4) Associated Services | Total |
|---|---|---|---|---|---|
| Phase II | Pro rated | Pro rated | Pro rated | Pro rated | Pro rated |
| Phase III | | | | | |
| Year 0 | * | * | * | * | * |

| | | | | | |
|---|---|---|---|---|---|
| Year 1 | * | * | * | * | * |
| Year 2 | * | * | * | * | * |
| Year 3 | * | * | * | * | * |
| Year 4 | * | * | * | * | * |
| Year 5 | * | * | * | * | * |
| Year 6 | * | * | * | * | * |
| Year 7 | * | * | * | * | * |
| Year 8 | * | * | * | * | * |
| Year 9 | * | * | * | * | * |
| Year 10 | * | * | * | * | * |
| Year 11 | * | * | * | * | * |
| Year 12 | * | * | * | * | * |
| Year 13 | * | * | * | * | * |
| Year 14 | * | * | * | * | * |

Notes:

1. New Meters (Column 1) includes *.
2. Meter Modules (Column 2) includes * .
3. Buyout prices will be amortized on a * .
4. At the end of Term, Duquesne has an optional buyout of the New Meters at * which includes a * residual payment for three-phase PowerPlus Alpha meters. Should Duquesne elect not to buy the New Meters, Duquesne Will pay the Contractor *
5. New Meter buyout price * in the event that the Term is extended.

* = Confidential treatment requested

SCHEDULE F

PERFORMANCE TESTING AND
PROCEDURE CERTIFICATION REQUIREMENTS

INTRODUCTION

Under this Agreement, Duquesne is purchasing automated data acquisition services to enhance the billing, marketing and outage management functions of its customers.

Duquesne, as the purchaser in this Agreement, in cooperation with the Contractor, will approve a Test Plan to test these systems and to certify compliance with key regulatory areas as specified in the Agreement. Contractor will in most cases develop the test plan details based on input from Duquesne and the product or functional requirements of the system and submit them to Duquesne for review and approval.

As system components, including hardware, operating software, software applications and data interfaces are installed and implemented during each Phase of the Agreement, detailed test plans will be developed and performed to ensure that each system achieves acceptable performance levels.

OUTLINE OF TEST PLAN

The System Test Plan will include the following major sections. Testing will be conducted as set forth below during Phases I and II to demonstrate that Contractor meets the requirements of the Agreement, including the appropriate functional requirements of Schedules A and B and the performance standards identified in Schedule L, and during and throughout Phase III, as appropriate, for ongoing testing during the entire Term of the Agreement.

1. System Installation Acceptance Testing

2. Meter Testing and Operational Performance

3. Software Acceptance

a) Network Management Applications

b) Contractor Supplied Network Applications

c) Duquesne Application Enhancements and Interfaces, including Interfaces and Other File Transfer Mechanisms

4. UTS MV-90 System Performance

5. Operating Performance - Information Services (IS) Management

6. Radio Frequency (RF) System Performance

The detailed test criteria and required performance levels included in this plan will be more fully described in each test plan document. All tests will be developed prior to the time each test is to be performed. In some cases, such as the development of some user applications, the final test criteria will not be completed until just prior to testing. When issued, the test plan will describe which testing is to be concluded prior to Phase II acceptance, and identify any anticipated tests that will be completed during Phase III.

I. SYSTEM INSTALLATION ACCEPTANCE TESTING

A. Fixed Network Routes

When a Route or Routes on the Fixed Network are turned over to Duquesne during Phases I and II, the following tests may be performed at Duquesne's option prior to its Acceptance of the Route. (Some tests, for functions such as * notification, will occur during Phase III.)

1. Cross reference the van or manual meter reading data and the readings from the Fixed Network to verify accuracy.

2. Test the outage notification feature of the system by (1) de-energizing a select number of special non-billing meters and (2) cross referencing Itron's outage reports with Duquesne's circuit outage records to indicate that an outage has registered. * is based on * .

3. Test the tamper detection function by removing a select number of Meters to verify that a tamper report is provided and is processed in a manner which is consistent with Schedules A and B.

4. Verify that the system is providing daily readings for each

Meter.

5. Verify that the Fixed Network communications coverage is consistent with the required number of billing Meters outlined in the Agreement.

6. Verify that load profile Data can be obtained without Meter replacement on a sampling of single-phase self-contained Meter installations.

7. Perform an on-demand test of * load profile accounts equipped with * (see Schedule D) to stress test the system (prior to Phase II acceptance). These * accounts will be distributed throughout the Fixed Network on multiple routes.

8. Verify that data passed to Duquesne satisfies data collection and delivery requirements for at least * of the eligible meters in the system.

B. GIHP/Polling Engine

Tests will be developed and conducted to evaluate the correct operation and performance of the Genesis Itron Host Processor to confirm its ability to meet the performance requirements of the Agreement.

C. MV-90 Translation System

Test Plans will be developed and conducted to evaluate the correct operation and performance of all hardware and software components that will be implemented for the MV-90 Translation System, to confirm their ability to meet system performance requirements. Hardware and software interfaces not totally designed and finalized will have test plans developed once all functionality and interfaces have been completely defined. The required test plans will be developed by Itron to be reviewed and approved by Duquesne Light during Phase II as the system components are designed and installed. Any negative impact on performance caused by shared phone lines will not constitute system failure.

D. *

Tests will be developed and conducted to evaluate the correct operation of the * device which will be used for the single phase demand customers with loads less than * . Other technology options may be utilized that are available and satisfy Duquesne's regulatory (ANSI specification) and Best Industry Practices.

E. DCI Sentry

Tests will be developed and conducted to evaluate the correct operation of the DCI Sentry equipment which may be utilized at Itron's option for fixed network deployment, and residential accounts that are in URD areas, and also in remote areas, where fixed network coverage or advanced functions are desired. Test plans will be developed by Itron to be reviewed and approved by Duquesne. Other similar end point devices may also be utilized upon approval by Duquesne subject to their ability to meet best industry practices and regulatory requirements.

F. ABB PowerPlus Alpha

Tests will be developed and conducted to evaluate the correct operation of the ABB PowerPlus Alpha meters and the various required interfaces between the C&I Customer locations and the MV-90 Translation System.

Duquesne may perform the above tests, and any others identified as appropriate, as described in the test plan documents. As Routes, systems or components are completed and certified by Contractor as complete, Duquesne will perform acceptance testing in accordance with the Agreement. Once accepted by Duquesne, accounts will become available for billing purposes as part of the installed system in accordance with Schedule D.

II. METER TESTING AND OPERATIONAL PERFORMANCE

The following test functions may be performed at any time throughout the Term, at Duquesne's option, as required to ensure proper Meter testing operational performance and procedure compliance.

METER SHOP OPERATIONS

1. Verify that the Meter Shop facility is fully capable of providing all required meter maintenance repair and test functions.

2. Verify that purchase orders have been issued to approved vendors for new single-phase and three-phase meters in accordance with Duquesne's specifications and requirements.

3. Verify that backup plans for meter test and new purchase data upload are in place.

4. Verify the process of preparing meters for installation to ensure that all Meters are equipped with a Duquesne approved bar code label.

5. Verify that all meter warehouse areas are secured and organized to distinguish tested and untested Meters.

6. Verify that all meter test boards are connected to Duquesne's Automated Micro Systems automated meter test data collection system.

7. Verify that mainframe terminals are installed for access to Duquesne's DISCuS system and that appropriate customer service and meter records data is properly entered.

FIELD OPERATIONS

1. Verify that agreed on procedures are documented and are being followed for all field operations.

2. Verify that the Contractor adheres to Duquesne's meter installation standards and procedures.

3. Confirm that the Read-One Pro electronic data capture system is working properly.

4. Confirm that a meter training program is in place for installers.

5. Confirm that field personnel are provided all necessary test equipment, tools and accessories.

PERIODIC CERTIFICATIONS

1. Certify that the Contractor is compliant with all applicable Pennsylvania Public Utility Commission regulatory requirements.

2. Certify that the following numbers of New Meters are accuracy tested before installation: * of new transformer-rated meters and a random sample of *

of every * new self-contained Meters.

3. Certify that the Contractor is following Duquesne's meter shop and installation requirements; such as, periodic calibration of watt-hour meter test boards and maintenance of Duquesne's accuracy tolerances.

4. Certify that the Contractor is meeting Duquesne's requirements to ensure the integrity and correctness of the meter installation; such as, verifying the billing constants, inspection for correct instrument transformer ratio, and verifying correct use for single-phase transformer rated meters.

5. Certify that the Contractor is adhering to Duquesne's record keeping requirements for meter records (description, location and test) and service order completion.

III. SOFTWARE ACCEPTANCE

In accordance with this Agreement, Itron will provide all fixed network and MV-90 software and the necessary interfaces to meet the requirements of Schedules A and B.

1. Network Management Applications

Final deliverables will be accepted when they successfully operate in accordance with the requirements of Schedules A and B. This includes all SNMP MIB information for Contractor supplied equipment for a time period reasonably sufficient to demonstrate that it possesses no defects, program errors, malfunctions or inconsistencies that impair its ability to substantially perform its intended functions in accordance with the Design Specification(s) (see definition of "Design Specification(s)" under Item #4 of this Section).

2. Contractor Supplied Client Applications

Final deliverables will be accepted when they successfully operate in accordance with the requirements of Schedules A and B for a time period reasonably sufficient to demonstrate (1) that they are functioning correctly on data generated by Duquesne business operations as reflected in the Design Specification(s), which data has been updated by the Duquesne application enhancements and interfaces themselves in a prior cycle, and (2) that they possess no defects, program errors, malfunctions, or inconsistencies that impair their ability to substantially perform intended functions in accordance with the Design Specification(s).

The permanent technical and user documentation for the Contractor supplied client applications shall meet standards regarding content, media, and quality criteria as reflected in the Design Specification(s).

Test plans will be developed and performed for the numerous hardware and software interfaces that will be required between Duquesne's DISCuS, data warehouse, customer record and billing systems and the Itron GIHP and MV-90 systems. The overall data system architecture will continue under design review and determination during Phase II; however, the following interfaces have been identified as likely to be required and will be tested as they are developed and implemented:

1. Billing Interfaces

a) Sentry Consumption Data through Fixed Network
b) MV-90 Determinants - Power Billing Package (see Schedule A)
c) MV-90 Billing Determinants - (Current Complex Meters - * Accounts)
d) Consumption/Demand/KVAR through DCI, DCO, HHC and MV-90
e) * Consumption/Demand Data Through Fixed Network

2. Daily Consumption Data through Daily Reads Process

a) Kilowatt Demand (Daily Reads with KVAR & TOU) - MV-90 System
b) KWHR Consumption (Daily Reads with Demand) - Sentry/ * Devices
c) TOU Data Collection (Version 2.5 Software)

3. Load Profile Accounts

a) MV-90 to Data Warehouse Interface - Interval Data- Class Profile
b) Standard ERT'd Meters on Fixed Network - Up to * Intervals
c) * Meters - Interval Data
d) DCI Sentry - Interval Data

Note: In many cases, the appropriate end point device for a load profile application will be determined by Itron through analysis of system link level reliability, or other factors affecting or limiting performance under Schedule L. Interval data interfaces are more completely identified and defined in Schedule A.

4. Rate Scheduling Interfaces ( * Required)

a) Assigning Device to Rate
b) Create New Rates

5. Events and Alarms

a) CCU Outage Detection *
b) CCU Outage Detection - *
c) Alpha Meter Outage
d) *
e) DCI Sentry Outage

6. Real Time Pricing

a) C&I Accounts Through MV-90 RTP Package (Large)
b) C&I Near Real-Time Interface (Small)
c) Fixed Network Accounts Through Near Real-Time Interface

Note: Near real-time RTP interfaces are identified in Milestone #13 system architecture documents and described in Schedule A. See also Schedule L.

7. On-Request Reads

8. Virtual Turn On/Off

9. MV-90/DISCuS/Data Warehouse Data Synchronization

3. MV-90 Data Management Software

In addition to fixed network applications, Contractor will provide and install the MV-90 software applications for consolidation and processing of three phase and larger (transformer rated, * or greater) single phase services primarily using ABB PowerPlus Alpha meter technology.
Included in this system are the following packages:

1) Base System with Reporting Package
2) TOU Option
3) Load Research/Load Profiling
4) Power Quality Functions
5) Real Time Pricing System
6) MV-PBS Power Billing System
7) MV-90 Read Only System
8) UTS Load Control Station

The MV-90 Multi-Vendor Software will include the following software in the base system package mentioned above for use on the Master System as well as for use on Local Data Servers when used for distributed data collection.

MV-90 Base System with Reporting Package Remote Interrogation Package Totalization Package Time-of-Use Package Graphics Package Lotus File Format Package PC to Host File Transfer Package Direct Unload of Handheld Readers Load Research Package

4. Duquesne's Application Enhancements and Interfaces

The final deliverables will be accepted when they successfully operate in accordance with the Design Specification(s) for a time period reasonably sufficient to demonstrate that it is functioning correctly on data generated by Duquesne business operations as reflected in the Design Specification(s), which data has been updated by the Duquesne application enhancements and interfaces themselves in a prior cycle, such that it possesses no defects, program errors, malfunctions or inconsistencies that impair its ability to substantially perform its intended functions in accordance with the Design Specification(s).

The permanent technical and user documentation for the Duquesne application enhancements and interfaces shall meet standards for content, media, and quality criteria as reflected in the Design Specification(s).

5. Design Specification Definition

Design Specifications shall be prepared by the Contractor and shall include all functional and performance requirements and characteristics of the final system deliverables and provide the necessary criteria for acceptance thereof. The parties shall jointly develop the Design Specification during Phase I of the Contract or in Phases II or III as appropriate. The Design Specification shall include, among other things, the following criteria, characteristics, and descriptions:

a) Identification of business areas affected by the Duquesne enhancements and interfaces and the business impacts for each area. Detailed description of the deliverable with the intended functionality;

b) Conversion requirements, permanent documentation requirements, implementation strategies, and knowledge transfer approach for the final deliverable;

c) System testing using controlled test data;

d) Integration testing using actual Duquesne data generated by Duquesne operations.

A deliverables schedule will be generated which will describe what must be provided and tested during Phases I and II. Any deliverables not completed and fully tested as required during Phase I must be clearly identified and approved for transfer to Phase II by Duquesne. Similarly, all deliverables not completed and tested as required during Phase II must be identified and approved by Duquesne for transfer to Phase III.

IV. OPERATING PERFORMANCE

Information Services Management

The Contractor shall provide * response time for standard queries to the CaRS database for access to individual records by * simultaneous users as described in Schedule A.

The Contractor shall provide twenty-four (24) hour by seven (7) day access to the CaRS database for data access for * simultaneous users.

Backup plans and help desk support must be in place, and network monitors provided under the Agreement must be operational.

Meter reading Data must be available to accomplish the required customer billings.

DISCuS and Oracle interfaces must function properly. GIHP and MV-90 interfaces must be established with appropriate file transfer mechanisms in place and operating properly.

Installation files, service order processing and other DISCuS interfaces must be properly synchronized to permit effective operation of Duquesne's Customer Information System (CIS) systems.

Meter change and DISCuS update processes must be working properly, and provide the required data transfer functions.

## V. RADIO FREQUENCY (RF) SYSTEM PERFORMANCE

### Considerations for Testing of the Fixed Network

The automated data acquisition system may be considered to have two general functions: (1) reliably obtain an accurate meter reading via an external system, and (2) transfer that reading to the Duquesne CIS system. The following tests may be used for acceptance of the installed system to ensure proper operation of the RF network:

In a System Control and Data Acquisition System (SCADA) or similar network, the most significant parameter would typically be the bit error rate (BER) achieved which enables transmission of data at the desired level of accuracy. Any equipment providing this type of transmission must be shown to be reliable, (i.e., not incur excessive malfunctions which result in system errors). The system must also perform in the environment in which it is installed. It must have sufficient margin to demonstrate dependability in all weather conditions expected to be encountered.

Itron's spread spectrum system involves signals with short dwell times. Measurement of average BER as in a continuous wave would be undesirably complex. Data transmission will therefore be indirectly verified by separately verifying functional transmissions and their accuracy. From this point of view, a series of recommended system tests will be developed and included in the Test Plan during Phase I. In addition, some recommended tests for five years and beyond will be included for continued system monitoring and/or confirmation of ongoing system performance.

### Functional Test - Single Read

As each ERT'd Meter is installed, the Meter may be polled to verify that a reading has been received by the Fixed Network system. The readout will then be verified for accuracy. The correct type of reading, such as, consumption, demand, TOU, or Profile will also be obtained.

The Meter will then be temporarily disconnected to verify that an outage is reported by the CCUs when polled. This process will be conducted on a sample basis to ensure the integrity of the Route Certification Test prior to turnover to Duquesne for Acceptance Testing.

### Functional Test - Aggregate

The actual percentage of Meters installed and reported by the system will be measured and verified to ensure it is within specifications. The balance of the Data must be obtained by some alternative method, such as the mobile van, and must demonstrate that all remaining Meters have been identified and are being read in accordance with Schedule A.

| | | | |
|---|---|---|---|
| Minimum Percentage: | Phase I | Approximately | * |
| | Phase II (The Primary Installation) | | * |
| | Extended Buildout Requirement (If Option is Exercised by Duquesne Light) | | * |

The recommended test should be performed during a * period from Contractor's certification of Phase I and * period for Phase II. Accuracy Test

During Phase I of the Agreement, accuracy tests will be developed to be part of the Test Plan and will address system performance during Phase I, Phase II, and Phase III and will be performed throughout the contract Term.

Environmental Signal Variation Test

Propagation is subject to variation in environmental and climatic conditions, both short term and long term. A measurement on any given day cannot be assumed to represent either the worst or the best case. In addition to accuracy tests as above (during the thirty (30) day aggregate tests), an abbreviated accuracy test with sample size as above will be performed at least monthly and at least once during each type of extreme weather condition - hot, cold, wet, and dry. The sample selected should compare favorably against the same sample used for Phase I so that comparability can be documented through the test history.

Power Levels

The power levels at the transmitter outputs of all CCUs and NCNs will be measured and should confirm that the RF levels do not exceed licensed levels. ERT transmission outputs will be checked to confirm manufacturing certification requirements and assure that ERTs do not exceed FCC regulations.

Unscheduled Reads

The system will be configured for aggregate tests as described above. Unscheduled reads will be requested for each type of Meter on top of normal system activity. The readings obtained by the system will be verified to ensure that they meet the on-demand time specification.

System Data Storage

The aggregate test will be run for the specified storage time with the NCNs off. The NCNs will then be turned on to verify that the Meter reads can be recovered from stored Data in the CCU.

A similar test will be run from the NCN. The uplink from the NCN to the Host Processor (GIHP) will be disabled. The links will then be restored to verify that the meter reads can be recovered from the stored Data.

The aggregate test will then be run to verify that the stored Meter reads can be recovered from the GIHP data. Itron will provide Data analysis that confirms that the remaining available storage area is within the storage specification requirement provided in the Agreement.

Power Outage

Duquesne will first verify that the system identifies an outage as a block (or CCU) outage * . Other tests will then be performed to confirm that the * and then indicating that power has been restored.

Scalability

The Contractor should provide a complete analysis which shows that the system design is in accordance with, and can accommodate, the Meter growth projections outlined in Schedule H. This analysis will be completed, as further described in the final test plan, during Phase II, and will be a prerequisite for Phase II acceptance.

Sample Size

Test sample sizes are based on usage projections that will be better quantified in the Test Plan. Generally a * sample is taken for Phase I and * for the full system.

VI. ACCEPTANCE TESTING

The Fixed Network testing that will be performed during Phase II acceptance will include among other tests the identical tests that Contractor now has the capability of performing on an existing test system in Spokane, Washington. The following are the current test functions:

CCU and ERT Testing will focus on the efficiency, effectiveness, and reliability Communications of CCU and ERT communications.

CCU and NCN Testing will focus on the efficiency, effectiveness, and reliability Communications of CCU and NCN communications.

NCN and NCN Testing will focus on the efficiency, effectiveness, and

reliability Communications of NCN to NCN communications.

NCN and GIHP Testing will focus on the efficiency, effectiveness, and reliability Communications of NCN and GIHP communications.

| | |
|---|---|
| Genesis | Applications Testing will be performed on the Software included in Itron's Fixed Network applications. Methodology and criteria will be based on the Design Specifications included with these applications. For further definition, refer to Schedules A and B. |
| Network Application Software Functionality | Network functionality has been provided to ensure ease of installation, maintenance, and Data collection flexibility. These functions will be tested based on definitions described3 in Schedule A. |

| | |
|---|---|
| Network Management | SNMP and associated GUI interfaces have been provided and will be |
| Software Functionality | tested for effective management of network components. For further definition refer to Schedule A. |

Itron Specific SNMP Custom MIB tables have been defined and will be tested according to MIBs Itron's defined specifications.

Billing Interface These applications will be tested to ensure Data reliability and Functionality integrity of Meter reads.

Remote Dial-In PC anywhere for Windows, PPP, and Xwindow capabilities will be tested Functionality for diagnostics, trouble shooting and monitoring or network components.

Ease of Installation of Evaluations of the installation of hardware and Software will occur Hardware and Software throughout Phase I of the contract.

Implementation Evaluations of the implementation methodology will occur throughout Methodology Phase I of the Agreement.

Usability of Documentation will be provided throughout Phase I for evaluation and Documentation updates

ERT Installation Location Various environmental locations will be tested to determine Profiles communication effectiveness.

Acceptance testing upon completion of Phase II installations will be conducted as necessary to confirm that applications and components meet appropriate functional requirements outlined in Schedules A and B, and to ensure that they meet the requirements of Schedule L. System performance will be measured against required performance criteria such as individual application performance, timeliness of data delivery, application response time, data throughput and storage capability, and other criteria as specified during Phase II. All deliverables must be operational as defined in various sections of the Agreement prior to system acceptance, except for those items specifically designated for Phase III completion.

## VII. TEST PLAN DEVELOPMENT

Required test plans will be developed during Phases I and II as systems components and software applications are designed and implemented, and must be approved by both Duquesne and the Contractor before equipment, software, or software applications or interfaces are placed into a production environment.

The overall test plan will contain two parts with Part 1 containing tests that can be fully identified at the writing of the plan, and Part 2 including the tests for requirements of the system that cannot be fully identified by the time that original plan is written, as well as listing the final tests and performance levels that must be achieved prior to the Acceptance of the parts of the system that the particular test plans cover at the conclusion of Phase II. For example, a test for an application software feature that hasn't been identified or designed by the time that the original test plan is written will be included in Part 2, which will also provide a methodology or template for the development of any required test plan documents for new applications and equipment implemented during Phase III of the services contract.

REPLACEMENT SCHEDULE G

SCHEDULE G

SINGLE PHASE IN-SERVICE METER POPULATION

| DUQUESNE SAMPLE GROUP | MANUFACTURER | TYPE | PRODUCTION YEARS | NUMBER IN SERVICE | METERS TO BE SCRAPPED |
|---|---|---|---|---|---|
| D | Westinghouse | CS, CA | 1941 - 1961 | * | * |
| E | Westinghouse | CS | 1950 - 1957 | * | * |
| F | Westinghouse | DS | 1955 - 1957 | * | * |
| G | Westinghouse | DS | 1957 - 1960 | * | * |
| I | Westinghouse | D2S | 1961 - 1963 | * | * |
| J | Westinghouse | D3S | 1963 - 1968 | * | * |
| K | Westinghouse | D4S | 1968 - 1971 | * | * |
| L | General Electric | I60 | 1948 - 1967 | * | * |
| M | General Electric | I70 | 1968 - Present | * | * |
| N | Westinghouse | D4S | 1971 - 1977 | * | * |
| O | Westinghouse | D4S | 1977 - 1984 | * | * |
| P | Westinghouse | D5S | 1984 - 1988 | * | * |
| R | Westinghouse | D5S | 1988 - Present | * | * |
| S | Schlumberger | J5S | 1986 - Present | * | * |
| Hexagram | Schlumberger | J5S | 1986 - Present | * | * |

* ABB type D5S residential meters in the range G72,000,000 to G73,999,999

| | |
|---|---|
| Total Meters (Active Accounts) | * |
| Total Meters (Inactive Accounts) | * |
| Total In-Service Meters | * |

Notes:

1. Contractor will purchase new Meters to replace Meters identified above as "to be scrapped."

2. The above single-phase in-service Meter population is based on in-service Meters as of July 14, 1995.

3. The above table pertains to single-phase KWH residential Meters only. The quantity of single-phase demand Meters which will be provided by the Contractor is identified in Schedule H.

# REPLACEMENT SCHEDULE H

## SCHEDULE H

### METER POPULATION FORECAST

| | SINGLE PHASE | | | | |
|---|---|---|---|---|---|
| YEAR | KWH | DEMAND | THREE-PHASE | TOTALS | GROWTH PERIOD |
| 1995 | * | * | * | * | |
| 1996 | * | * | * | * | |
| 1997 | * | * | * | * | 1 |
| 1998 | * | * | * | * | |
| 1999 | * | * | * | * | |
| 2000 | * | * | * | * | 2 |
| 2001 | * | * | * | * | |
| 2002 | * | * | * | * | |
| 2003 | * | * | * | * | 3 |
| 2004 | * | * | * | * | |
| 2005 | * | * | * | * | |
| 2006 | * | * | * | * | 4 |
| 2007 | * | * | * | * | |
| 2008 | * | * | * | * | |
| 2009 | * | * | * | * | 5 |
| 2010 | * | * | * | * | |
| 2011 | * | * | * | * | |
| 2012 | * | * | * | * | |

Notes:

1. The above Meter forecast represents projected net Meter growth activity throughout the Term. Duquesne is not committed to achieving these quantities, nor does it agree to be limited by them.

2. Growth projections are approximate. If net cumulative Meter population exceeds the ending projected levels for the appropriate growth period by * or greater, the Change Order Notice process described in Section 4.8 of the Agreement will be initiated.

3. The Parties agree that the Contractor shall expend up to * per year for the purchase of Three-Phase and single phase ABB PowerPlus Alpha Meters. Any amount not expended in a given year shall be added to the amounts available for subsequent years. If the cumulative purchase cost for such meters exceeds the cumulative annual amount identified above, Contractor may proceed under Section 4.8 of the Agreement.

4. If actual Meter growth exceeds the above cumulative Meter population forecast, either by type or period, Contractor may proceed under Section 4.8 of the Agreement.

5. Requirements for load research meters are identified in Schedule A. If these requirements are exceeded, the change control process will apply.

REPLACEMENT SCHEDULE I

SCHEDULE I

CUSTOMER SERVICE REQUIREMENTS

REGULATORY GUIDELINES

1. Pennsylvania Public Utility Commission Compliances Guidelines

2. Chapter 56 Regulations - Standards and Billing Practices for Residential Utility Service

PROGRAMS/MANUALS

1. Customer Service Guarantee Programs as attached hereto

2. Customer Service Representative Section Manual Requirements

3. Maintenance of a Customer Satisfaction Performance Index, as measured by Customer Contact Survey results conducted by Duquesne for work performed by Contractor, for field-related meter installation and servicing activities of not less than 6.7 out of a possible 7.0 scale based on criteria defined in Schedule A including categories for Friendly and Courteous, Timely, Professional and Competent, Respected Property, and Presentable performance.

Contractor acknowledges the importance of customer service and agrees that compliance with these programs and guidelines is essential to the delivery of quality customer service. In this regard, Contractor agrees to assume responsibility, during Phase III, for reimbursement to Duquesne for applicable Customer Service Guarantee Program payments made by Duquesne as the result of Contractor's actions or inactions. A quarterly summary report outlining all Contractor infractions will be prepared and provided to the Contractor by Duquesne, applicable payment amounts will be shown as a credit on the following month's invoice.

Note:

In the event that a performance guarantee is assessed for the accuracy/error rate category defined in Schedule L, any reimbursement amounts already charged for reading errors will be treated as a credit to the total assessment due under Schedule L, Table 3.

SCHEDULE J
MILESTONE SCHEDULE

| | MILESTONE | DATE | CATEGORY |
|---|---|---|---|
| 1. | Agreement Signed | January 15, 1996 | Complete |
| 2. | Begin Kickoff Meetings and Preparation | March 4, 1996 | Complete |
| 3. | Phase I Installations Begin | April 28, 1996 | Complete |
| 4. | * | May 1, 1996 | Complete |
| 5. | Initial Phase I Meter Installations Completed | June 17, 1996 | Complete |
| 6. | Initial Receipt of New Phase II Meters With Modules | June 17, 1996 | Complete |
| 7. | Oracle/GIHP Installed With Basic Oracle Applications | June 21, 1996 | Complete |
| 8. | * | August 16, 1996 | Complete |
| 9. | Retrofit Center Becomes Operational | August 30, 1996 | Complete |
| 10. | Maximum Meter Deployment Rate Achieved (60,000 - March 1997) | March 31, 1997 | Complete |
| 11. | Complete Meter Test Lab Setup | July 15, 1997 | Complete |
| 12. | Version 2.4.2 Operational, CBI Operational with 100,000 Accounts Read on Fixed Network (Available to Be Billed) | July 31, 1997 | Complete |
| 13. | Finalize High level GIHP/MV-90 Data Flow Paths and Interfaces | July 31, 1997 | Complete |
| 14. | Contractor Begins Testing and Maintenance of Single Phase (Non-Demand) Meters | August 15, 1997 | Complete |
| 15. | MV-90 and Version 2.5 Application Specifications, * and DCI Product Specifications Delivered to Duquesne | August 31,1997 | Complete |
| 16. | Achieve Phase I Acceptance (100,000 Fixed Network Accounts Available for Billing in August) | August 31, 1997 | Not Applicable |
| 17. | Phase II Begins | September 1, 1997 | Not Applicable |
| 18. | 100% ERT Field Installations Completed (Non-Demand) (Except URD) | * | * |
| 19. | MV-90 Translation System Installed and Operational with Required Interfaces | * | |
| 20. | * Functional Specification Delivered to Duquesne | * | |

| | MILESTONE | DATE | CATEGORY |
|---|---|---|---|
| 21 | 50% of Identified Equipment Field Installations Completed | * | * |
| 22. | * | * | * |
| 23. | Genesis Fixed Network Version 2.5 Software Installed and Operational ( * Accounts on Fixed Network, Daily Reads, All Applications Functioning) | December 31, 1997 | CRITICAL - See Note 4 - |
| 24. | * Functional Specification Delivered to Duquesne | * | |
| 25. | 100% of Fixed Network Equipment Installations Completed - * Fixed Network Coverage/100% with ERTs or Sentry (including URD, excluding Demand Accounts) | * | * |
| 26. | Network Monitoring Capability - SNMP Implemented | * | |
| 27. | Complete System Support for Single Phase and Shared Line Three Phase ABB Alpha Meters Installed by Duquesne including Required Interfaces (excluding * Accounts) as Defined in Schedule A | May 31, 1998 | Significant - See Note 7 - |
| 28. | Complete * Installations on Applicable Single-Phase Demand Accounts | * | * |
| 29. | Fixed Network Functionality Operational-Including applicable Schedule A interfaces ( * of Single-Phase Accounts on Fixed Network, Daily Reads, Billed from Fixed Network) | June 30, 1998 | CRITICAL - See Notes 5 & 6 - |
| 30. | Real-Time Pricing Implemented and Operational (MV-90 Accounts) (Excludes * ) | * | * |
| 31. | Phase II Acceptance - Achieved | * | Not Applicable |
| 32. | Phase III Begins | * | Not Applicable |
| 33. | * | * | * |
| 34. | Complete Remaining Interfaces Identified in Schedule A Section 3.2 | * | * |
| 35. | Enhanced * Performance Achieved - (See Schedules B and L) | * | * |
| 36. | * for Fixed Network (including * ) Accounts - Operational | * | * |
| 37. | Complete Appropriate Communication Links for Three Phase Alpha Meters Installed by DLCo as of * as defined in Schedule A | * | * |
| 38. | Fixed Network Build Out Completed if Option Exercised by Duquesne (Covering up to * of Customers in Service Area) | * | * |

| CATEGORY DEFINITIONS | PROJECT IMPACT |
|---|---|
| 1. Critical - Top Priority Milestone | Potential Default of Contract |
| 2. Significant-Serious Schedule Deficiency | Delay Liquidated Damages Imposed by Duquesne |
| 3. General - Area of Concern (All Others) | Corrective Action Plan Submitted to Duquesne |
| 4. Complete | Milestone has been Completed |

Notes:

1. Finish dates for equipment milestones remain fixed regardless of changes in equipment quantities that may occur.

2. "Production" or "operational" use is defined as delivered, tested and accepted for use by Duquesne.

3. MV-90 system and functions to be delivered by the dates established upon completion of Milestone #13, but not later than October 1, 1997 (see Milestone #19).

4. If Milestone #23 is not achieved on schedule, Itron agrees to pay $5 million delay liquidated damages and then either install ABB Alpha meters on all remaining (less than * ) single-phase demand accounts in lieu of * hardware (Duquesne must select this option within 30 days) or pay a second $5 million "cure for default", whichever is requested by Duquesne. At Duquesne's option in lieu of either of these two alternatives, Duquesne may collect the first $5 million delay liquidated damages and then proceed with default.

5. If Milestone #29 is not achieved, Contractor agrees to pay $5 million delay liquidated damages, and then pay a second $5 million "cure for default" penalty at Duquesne's option in lieu of proceeding with default. At Duquesne's option, Duquesne may collect the first $5 million delay liquidated damages and then proceed with default. Selection of one of these second two options will remain open, if a choice is not made, until such time as the milestone is achieved.

6. Once Milestone #29 is achieved and Phase III pricing is in effect, subsequent failure to complete one or more of Milestones #33-37 will bring about a * (non-cumulative) reduction in the monthly base price amount shown on Schedule D until such time as that milestone(s) has been completed.

7. Milestone #27 will have special status. Both parties agree that failure to meet that date will result in a (no cure period) payment of $5 million delay liquidated damages even though Milestone #27 is considered a significant milestone.

8. Phase I Acceptance is defined as Milestone #12 completed, tested and operational, with Milestones #13-16 also completed, and 100,000 accounts available to be billed through the fixed network.

9. Phase II Acceptance is defined as Milestone #31 completed with Milestones #18-30 also completed. All deliverables tested and accepted by Duquesne per agreed test plans as defined in Schedule F.

REPLACEMENT SCHEDULE K

SCHEDULE K

MINOR CHANGE ORDER

SUBMITTED BY: CHANGE ORDER NO.: DATE:

ACTION

DESCRIPTION OF CHANGE

| Scope Change: | Price Adjustment: | Significant | Performance Impact: Schedule Impact: |
|---|---|---|---|
| \|_\|YES \|_\| NO | \|_\| YES \|_\| NO | \|_\|YES \|_\| NO | \|_\|YES \|_\| NO |

Disposition:

The above description describes in detail the nature of the change, along with the explanation of any categories where "Yes" has been selected above. The undersigned agrees that no work will be performed concerning this change until approval is received as indicated below:

Authorized Representative

SIGNATURES

Signature: Date:

Itron Project Manager:

Duquesne Light Project Manager: Signature: Date:

REPLACEMENT SCHEDULE L

SCHEDULE L

PERFORMANCE GUARANTEES

Under terms of the Agreement, Contractor guarantees the following during Phase III:

I. SCHEDULED BILLING READS COMPLETION

* of the scheduled billing reads required for billing purposes during any month will be attempted during such month. The following assessments shall be charged if * of the scheduled billing reads are not attempted within the * reading window in any month (see Note 3).

| SCHEDULE COMPLETION | | | % ASSESSED |
|---|---|---|---|
| Less than | * | or more | * |
| Less than | * | or more | * |
| Less than | * | or more | * |
| Less than | * | | * |

TABLE 1

II. PERCENT OF SCHEDULED BILLING READS OBTAINED

During any month, * or more of the scheduled billing reads will be obtained during the * period such reads are permitted to be obtained. In the event the percentage of scheduled billing reads obtained on schedule falls below * in any month, the following assessments shall be charged (see Note 3):

| ASSESSMENTS | |
|---|---|
| % OF READS OBTAINED | % ASSESSED |
| | |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |

TABLE 2

III. ACCURACY/ERROR RATE

During any monthly billing cycle the number of reading errors will not exceed * . In the event the number of reading errors exceeds * during a monthly billing cycle, the following assessments will be charged:

| ASSESSMENTS | |
|---|---|
| # OF ERRORS | % ASSESSED |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |
| * | * |

TABLE 3

IV. SCHEDULED DAILY READS FROM FIXED NETWORK METERS
PERCENT OF VALID DAILY READS OBTAINED ON SCHEDULE

During any month the percentage of valid scheduled daily reads received by the following day (based on cumulative totals for such month as measured on a calendar day basis) obtained from meters covered by the fixed network and the MV-90 system (excluding communications deficiencies or operator error) will equal
* or more. In the event the percentage of valid scheduled daily reads falls below * for any month, the following assessments will be charged (see Notes 4 and 7):

| ASSESSMENTS | |
|---|---|
| % OF READS OBTAINED<br>% ASSESSED | |
| * | * |
| * | * |
| * | * |
| * | * |
| * | |

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TABLE 4

V. OUTAGE DETECTION AND RESTORATION REPORTING

Deliver CCU * outage detection and restoration notification through appropriate delivery mechanisms within the required response times defined in Schedule B, * of the time by * (as determined through random sampling techniques initiated by Duquesne - See Note 8).

| ASSESSMENTS | |
|---|---|
| % REPORTED WITHIN SPECIFIED RESPONSE TIME * | % ASSESSED |
| * or Greater | * |
| Less than * | * |
| Less than * | * |
| Less than * | * |
| Less than * | * |
| Less than * | * |
| Less than * | * |

TABLE 5

VI. OPERATING STANDARDS

Respond to Level 1, 2 and 3 system operating deficiencies within * , * and * , respectively.

VII. SYSTEM PERFORMANCE STANDARDS

Near real time data availability is defined as * or sooner, when posting current RTP data for customer access, through the appropriate data transfer mechanism (see Note 5).

NOTES:

1) The percentages set forth in Tables I through V will be applied to the total amount due to Contractor for the applicable month (excluding any credits, set-offs, or assessments) and will be shown as a credit on the invoice for the month.

2) A reading error will exist if the difference between the Itron recorded and actual reading as displayed on the meter is greater than * kilowatt hours.

3) The * reading window is defined as * before the scheduled reading date through the * period after the scheduled reading date.

4) A valid scheduled daily read is defined as delivery of any read or combination of reads on a daily basis as required to support a rate or advanced service listed on Schedule D. Reads required to support TOU and Customer Choice Option accounts, for example, must occur at specific times to support implementation of the rate. Consequently, each such daily read or required combination of reads is considered a "valid scheduled read" when evaluating performance. As a minimum, the valid scheduled daily read for fixed network and MV-90 system accounts not requiring advanced services is a daily read (see also Schedule A for read frequencies). Assessments for the Customer Choice Option rate will not begin before
* .

5) Section VII System Performance Standards are subject to the appropriate assessment schedules in Table IV for the purpose of determining any assessments to be charged if reads or alarms are not obtained.

6) Level 1 system operating deficiency is defined as a "critical" deficiency requiring immediate action; Level 2 deficiency is a "serious" deficiency requiring prompt action; Level 3 deficiency is a "non-critical" deficiency requiring follow-up action as described in the Contractor's Fixed Network Test Plan dated September 21, 1996.

7) The assessment and performance provisions of Schedule L are based on * of all metered accounts in Duquesne's service area being covered by the fixed network or MV-90 system beginning with Phase III. The total number of meters subject to these provisions will increase up to * of all meters by * , if Duquesne exercises its option to expand the fixed network up to * of all accounts. The formulas for calculating performance and determining assessments will be adjusted to reflect the increased number of accounts on the fixed network which are thereby subject to additional scheduled reads.

8) Outage detection and restoration reporting performance will be evaluated by Duquesne based on periodic statistically significant sampling of randomly selected meters throughout the fixed network coverage area once or twice annually.