

“Equipment Management System”

“White Paper”

First in a Series

Computerized

(Service & Maintenance)

Maintenance

Application

for

Biomedical

&

Clinical Engineering

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American Computer Services
Division of American Medical Resources, Inc.
Developed via Softwest Programming.

Preface

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Statement of Intent

American Medical Resources, Inc. provided and installed a “COMPUTERIZED (service and maintenance) EQUIPMENT MAINTENANCE SYSTEM” for biomedical services, clinical engineering and hospital maintenance management.

Softwest Programming, Inc. developed three series of software programs starting in 1979. The “EMP” Equipment Management Program, “WOP” Work Order Program, and “PIP” Parts Inventory Program. The entire programs are all flat data files that help track equipment inventory, preventive maintenance, and work orders related to preventive and repair maintenance.

Data conversion is a specialty that American Computer Resources since 1980. Data conversion from existing data files can be reviewed during installation and later imported according to the implementation schedule.

Training of the customers personnel will be an on-going process to maintain continuity. Ongoing software support and maintenance is critical to the success of the computerized management system.

A Computerized Maintenance System for Equipment, Work Orders and Parts Inventory.

1.0 INTRODUCTION

Per the request of your company, requests on the details of the software program series and the evaluation criteria is outlined herein. The answers contained in this document are intended to convince the appropriate evaluators and associated contractors and suppliers can successfully deploy and support the software program series and tools for a Computerized Maintenance System in accordance with specifications stated herein. Moreover, this is considered an OTS product. (Off The Shelf)

1.1 General Description and Summary of basic needs

The proposed system CMS Software By The Sea software program series will provide the following:

A method to maintain all facilities and associated data. This includes converting existing data from the mainframe system to the new proposed system. The exact fields to be converted will be determined during conversion and implementation.

The ability to generate work orders and track work order history by building, employee, crew, trade, craft, work orders; function, types, priority, status, problem, solution, etc.

Storage and retrieval of building, asset maintenance and repair history for the life of the building.

Preventive maintenance scheduling based on variable schedules.

The ability to track warranty information and maintenance performed under warranty.

Cost per building and life cycle cost.

The capability to use bar code technology for building, work order, part, and employee work hour data entry.

A database management system that easily provides ad hoc inquiries, reporting, security, backup and recovery.

A user-friendly, flexible system including features control by the use of the keyboard.

The capability to import and export files to and from this system in ASCII or other defined format.

Work Orders

- Are there multiple entries for posting? YES, based on billing criteria, hours, material, etc. []
- How do we easily accomplish planning and what is the process? YES []
This is done with manual scheduling item by item, globally changing criteria, or modeling.
- Can we have on the work order assignment of parts/material codes/locations? YES []
- How do we interface with the warehouse computer system? YES []
Via ASCII data exchanges manually or automatically timed.
- Can we show multi-craft on a single work order? YES []
- How do we input/show prioritization on a work order? with Priority Codes YES []
- What levels of authorization can be used on a work order? YES []
Functions with each work order and via Estimates for Completion. []
- How do we set up scheduling? With manual entry, globals, or modeling. YES []
- How can we recall the history of an asset? By any criteria selected. YES []

PM Work Orders

- Can we use a toggle for the frequency of maintenance? YES. []
Pre-emptive, date sensitive, numeric sensitive, based on last or next date due.
- Can we set it up as hours based? YES. User defined coded methodology. []
- How do we close and post? Last worker to indicate a completed date closes. Posting is accomplished with a selection of criteria. YES

Reports

- Can we have user-defined reports? YES. Report writer comes with runtime. []
- Can user-defined data be recalled from work orders? YES. []

Open Work Listing

- Backlog? YES, many formats. []
- By Type? YES, user defined. []
- By Craft YES. And by Craft/Trade, and by Crew. []
- By Facility (asset drilldown) YES. By Facility, Entity, Field Office, Depart., etc. []
- Compatible with Microsoft Products (Win95 and NT) and GUI driven? YES []
- Ease of up/down drill? YES []
- Examples of reports? See attached on diskette. []
- Adding/Removing/Updating? YES []
- Data forms? (spec sheets) YES, includes over 3,000 PM procedures. []
- Graphic interface - Hyperlinks? YES []
May require customer provided files to link to existing data sets.

Spare Parts and Materials

- Can the program display parts grouping (kits)? YES []
- Can the program interface with warehousing system (modular package) YES []
requires technical consulting to determine what data sets are needed.
- Can the program show parts codes and warehouse locations? YES, by Bin and Location []
- Can the program generate requisitions? YES []

Provisions for Training

- Who will be trained by the factory trainer? Selected end users, selected managers, selected administrators, selected network and CNE's as required. []
- How much time will be included for training? See typical proforma proposal []
Basic Training is estimated at five (5) to seven (7) days. Must be proficient in Windows.
CNE Training for Support and Supervisory Rights is one (1) day.
Administration Training requires same as Basic plus one (1) day.
- Will training be on-site or at the factory? Either, or at a multi-customer site. YES []
What is the price difference? See above.
- What are the equipment requirements for on-site training? Blackboard, Video Viewer, Single user work station for one or two trainees. YES []

Like Users

- Is there a list of users of this program who are in the same business as us? YES []
See diskette with demo for COMPANY.
- Are any of them regulated by a state, federal and private commissions? YES. []
We cannot provide a list at this time.
- Is there a list of users of this program who are in a similar business? YES []
See diskette with demo for COMPANY and our Reference Page.

1.3 Demonstrated Ability

Demonstrated ability to successfully provide a Computerized Management System for properties possessing similar characteristics as compared to other asset and property management programs. During the course of the presentation, we will provide examples of the items below. See details provided herein.

Ease of Use for non-technical users.
Best fit of features to business requirements.
Stability of vendor based on qualifications and financial soundness.
Total system cost (hardware, software, and communications).
Ability to integrate with other applications.
Training and support available from vendor.
Vendor references and number of installations.
Future technology direction of vendor.

COMPANY would appreciate that the customer to also further evaluate this White Paper and our products and services based on:

Completeness and timeliness of receipt of information.

Experience and technical expertise of assigned project staff.

Demonstrated commitment to Equal Opportunity.

Ability to demonstrate the integral parts of the CMS and the ability to change user and technical specifications to meet the overall objectives of management and finances.

To act expeditiously to demands that are considered important to administration.

22 years in the business without buyouts.

2.0 PROPOSED SYSTEM ENVIRONMENT

2.1 Installation and Implementation

Scheduled time line showing the sequence of events from the receipt of completed contract to the use of a fully functioning system using production data. The following represents a detailed description of the services and products required to accomplish the implementation. This is considered a sample plan based on fifty (50) concurrent terminals, fifty (50) thousand equipment items, and 200,000 work orders per year.

Sample installation schedule based upon contract:

Purchase necessary hardware	Day 1-10
System Configuration, Orange County, California.....	Day 11-41
Equipment Delivery to CUSTOMER by selected hardware vendor ..	Day 42-55
Installation of hardware.....	Day 25-46
Installation of software.....	Day 25-80
Initial software installation takes less than four (4) hours for five (5) work stations. On-going required for additional work stations.	
Pilot implementation.....	Day 35-55
Training On-Site.....	Day 40-60
Initial Hardware and Software Acceptance.....	Day 56&70
Data Conversion for Files (M).....	Day 11-41
Final Acceptance Inspection and Ownership.....	Day 100

Smaller scaled systems may take as few as three (3) days for installation and training. It has been our experience that the recommended days for training is five (5). Of which, only two or three may be needed in the onset. The actual number of days is based on the complexity of the system to be installed and the experience of the staff that will be using and managing the 'COMPANY' software program series.

2.2 INSTALLATION AND IMPLEMENTATION

The below scheduled time line showing the sequence of events from the receipt of completed contract to the use of a fully functioning system using production data. The following represents an itemized list of responsibilities to accomplish successful implementation.

Installation schedule based upon contract:

Purchase necessary hardware and software.....	CUSTOMER
System Configuration, Orange County, California.....	COMPANY
Equipment Delivery to CUSTOMER by selected hardware vendor	CUSTOMER
Installation of hardware.....	CUSTOMER
Installation of software.....	COMPANY

Pilot implementation.....	COMPANY
Training On-Site.....	COMPANY
Hardware and Software Acceptance.....	CUSTOMER
Data Conversion for Files (M).....	COMPANY
Final Acceptance Inspection and Ownership.....	CUSTOMER

Implementation Schedule

IMPLEMENTATION SCHEDULE BASED ON DAYS TO COMPLETE

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DURATION: 100 DAYS                                1 1 1
TASKS:  10 :          1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 0 0 1
NAME: CMS :  1 5      0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0
  
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PURCHASE HW  :I-----I
:
SYSTEM CONFIG:   I---I
:
DELIVERY CUST:      I-----I
:
INSTALL HARD  :           I-----I
:
INSTALL SOFT  :           I-----I
:
PILOT IMLEM  :               I-----I
:
TRAIN ON-SITE:               I-----I
:
HARD/SOFT   :                               I-----I
:
DATA CONVERT :   I---I
:
FINAL ACCEPT :                               FINAL ACCEPTANCE I-I
-----
  
```

I--I - Scheduled date range

2.3 General System Specifications

The specifications in this section describe what COMPANY proposes for a fully deployed computerized maintenance management system for support automation technology.

SOFTWARE OPERATIONAL CHARACTERISTICS

All major system functions shall be integrated to provide data sharing and facilitate data input, transfer, and transaction processing. The software shall be organized by module, or a similar structural design to provide a logical path to access related system functions.

The COMPANY solution includes a modular approach to all standard CMS needs. All Modules are fully integrated with one another and support data sharing, facilitate data input, data transfer and conform to transaction processing.

The COMPANY solution can include any and all the following fully integrated modules:

Equipment Inventory Module	Work Order Management Module
Scheduling Management Module	Client Management Module
Vendor Management Module	Personnel Management Module
Budget Management Module	Archived Data Management Module
Network Support Module	Risk Data Module
Purchase Order Module	Posting & Utilities Module
Parts Inventory Module	Asset Management Module
Report and Analysis Module	Report Generator Module
Materials Distribution Module	Bar Code Work Order Module
Bar Code Asset Management Module	Bar Code Parts Par Level Inventory Module
Data Dictionary Module	Type Dictionary Module
File Dictionary Module	Source Code Module
Business Graphics Module	Vehicle Management Module
Remote Work Order Module	Remote Equipment Inventory Module
Remote NO COMPUTER MODULE	COMPANYworks Fields Library
COMPANYworks Files Library	COMPANYworks Program Library
COMPANYworks Help & Menu Library	Scanned Work Order Data(no data entry)

MENU SYSTEM AND USER INTERFACES

The system shall be menu-driven to provide access to modular functions, data screens and all other areas of the system. The menu structure displayed on the screen shall be logical and consistent throughout the system. It is important that the system provides an intuitive user interface with easy-to-follow menus, logical data screen layouts, cursor prompts, processing messages, consistent function key operation, and that it permits easy access to all areas of the system.

The Software By The Sea solution is designed with practically and user friendliness user future in mind. Having supported an installed base of over 7,000 sites since 1979, the COMPANY solution is constantly undergoing improvements and enhancements based of new technology and end user feedback. Multiple private label licenses have been sold that includes the names of the buyers on the software product. COMPANY has all copyrights and trademarks included therein.

The COMPANY menu systems provides a very intuitive, logical and consistent interface for end Users and system administrators. All portions of the COMPANY solution provide extensive on-line help to include but not limited to; data input validation, help prompts and processing messages. During training and installation, when a user learns one screen, all other screens are learned immediately due to the consistent design of user interfaces for DOS applications, whether trained in DOS, Unix, DEC-VAX, or IBM AS/400.

PROGRAMMING LANGUAGE

The software programming language and operating system shall be transparent to users, and require no prior experience on the part of the operator. The development and deployment languages are written in Extended Benton Harbor Basic and Applesoft.

SOFTWARE OPERATING SYSTEM

The software shall be supported by MS-DOS Versions, or an equivalent, compatible operating system and shall be capable of operating on IBM or IBM-compatible hardware with the CPU being of Intel 8088 or Apple 6402 or above variety with at least 48k of RAM.

DOCUMENTATION

System documentation in the form of User Manuals, System Administration manuals, and any required technical reference guides is to be provided for all site installations. User documentation shall be completed in describing the operation of all system functions using text, graphics, diagrams, print screens and other media understandable to users at all levels.

System Administrator and end user manuals describe in full detail all features of the COMPANY solution and are provided to all sites where the COMPANY solution is implemented. All end user

manuals provide complete and detailed information, in an easy to understand format, for even novice users of computers. COMPANY takes great pride in its easy-to-understand end user documentation. Software programs created by Software By The Sea have one (1) menu to learn, which is standard throughout the operation of all programs.

SOURCE CODE ESCROW ARRANGEMENT

The software vendor shall agree to enter into an appropriate escrow arrangement giving access to the source code of the software under predefined circumstances such as the business failure or dissolution of the software developer, or the unilateral decision by the developer to terminate support or discontinue enhancement of the software.

COMPANY agrees to place source-code into an escrow account per the terms of the contract.

EQUIPMENT FILES

Equipment items are important physical elements of maintenance operations. These facility assets are subject to preventive and corrective maintenance. The equipment file shall not be transactional in design, and interact with the work order and other system files to exchange data for all system functions. This facility equipment file includes such items as air conditioning/heating units, fire sprinkler systems, mother/daughter boards, contracts, PM Schedules, asset data, sub-assemblies, ancillary devices, and other equipment tags, etc.

The core of the COMPANY solution provide sophisticated tracking of Preventive and Corrective Works Orders as well as facilitating Demand Works Orders. All files are relational in design and implementation and support full transactional processing. All modules are fully integrated to share data and support full record and file locking routines. All facility equipment items and any sub-components of a given equipment item can be tracked and maintained with the COMPANY solution.

FACILITY & BUILDING FILES

The system should provide files to accommodate information on facilities and buildings. It is essential that facilities have identification numbers and that work orders, preventive maintenance schedules, and accounting information be tied to facility numbers.

The COMPANY solution tracks equipment items by identification number and allows for the tracking of location. The location tracking can incorporate building information and the location within a building. COMPANY has been implemented in many sites that have multiple buildings, with multiple floors. All relevant data regarding a particular building, site or location can be tracked.

Additional Information regarding "Facility & Building Files"

The facilities database management system will also provide the following features to include but not limited to the following:

COMPANY identifies facilities by a unique identification number and locations within that facility are identified with building numbers, room numbers, client code and responsibility code.

All relevant design, essential physical data and construction data are available in the facility module of the COMPANY.

Historical data pertaining to major construction and modernization projects are tracked by the COMPANY system.

Mandatory and statutory inspections can be tracked within COMPANY, to include but not limited to elevators, fire suppression systems and associated renewal dates. COMPANY will flag any renewals that have become past due.

Inspections and required or scheduled tests are traceable in COMPANY.

Long term planning regarding projected replacement dates of major systems and components of those systems are available through the COMPANY Reports Module.

WORK ORDER FILE

The work order file shall be the primary medium of information exchanged throughout the software system. This file shall maintain interactive relationships with all pertinent system files for the transaction of work order information. The work order file shall appear intuitive to the user to facilitate data entry and the execution of all work order module functionality.

The COMPANY's core application is the "Work Order" module. This highly integrated systems allows for complete tracking of all types of Work Orders to include Preventive Work Orders, Demand Work Orders and Scheduled Work Orders. With an intuitive and user friendly interface, the COMPANY solution allows for novice to expert level users to benefit from the COMPANY solution. Other features included in the COMPANY Work Order module include but not limited to:

WORK ORDER MANAGEMENT - Additional Features

WORK Order's are entered via the Work Order Module of COMPANY. WORK Order's may be input from a range of enterprise wide remote work stations by maintenance staff, customers, clerk-of-the-works or other personal who have "rights" to do so.

COMPANY will perform on-line data entry validation to automatically verify account codes, facility numbers, department codes and all other user-designated key fields during the order entry process.

COMPANY will support user-definable job codes and priority codes in relationship to the routing and tracking of work flow.

Customer initiated WORK Order's will automatically assign the job status as "Requested" and will automatically be routed to Work Control for further inspection, verification, review and shop assignment.

COMPANY supports electronics distribution of WORK Order's to the appropriate assigned shop for further processing. Filters for WORK Order's to ensure that these are distributed only those groups that are affected. This filtering systems will limit WORK Order's presented for review or update to only those affected groups or user ID's. These filters may be overridden to enable more general queries.

PREVENTIVE MAINTENANCE FILE

This file shall contain all elements necessary to automatically generate PM work orders and maintain a specified work schedule. This file shall maintain a record of preventive maintenance due dates, last done dates, and a full description of the work activity to be performed on the equipment item or facility asset.

The COMPANY solution provides for soft and hard scheduling with the pre-emptive scheduling techniques of PM Work Orders scheduling.

WORK HISTORY FILE

This file shall maintain for selected number of years a full set or a separate subset of data collected from completed work orders. This shall include both corrective and PM work and shall be accessible through on-line queries as well as reports.

The COMPANY solution allows for the active maintenance of historical files to include any

selected number of years of historical information on completed WO's, PM's and DM's (Demand Maintenance). These files are accessible through on-line queries and a variety of reports. Work History Files are archived by date sensitive master records.

PARTS/MATERIAL INVENTORY FILE

This file shall contain all vital information on each stock item maintained in the file and shall permit parts to be stored in multiple stockrooms. This information shall be utilized interactively with other system files to perform purchasing functions and parts receipts, issues, and returns. The files shall be relational in design to permit updating of field data from system transactions.

The COMPANY solution provides for a complete and detailed Parts/Material Inventory File. This file will support multiple locations, replacement parts, receipts, issues and returns. As a fully relational file structure, the COMPANY solution provides real time, accurate data. Also included in the COMPANY Parts/Material Inventory file are the following:

Inventory transactions to include requisitioning stock, placing orders with vendors, receiving shipments and issuing and returning inventory to stock are completely audit-able. All transactions are code-stamped with user, time and date details.

PREVENTIVE MAINTENANCE WORK ORDERS

PM work order creation shall be done via the scheduling function of the PM module. PM work orders shall be maintained in a work order file provided with full query, edit, completion and re-open functionality.

COMPANY PM work orders are created via the scheduling function in the PM Module. All PM's are maintained in a separate file for full query and reporting access. Based on user rights, PM work orders can be edited, completed and closed as well as re-opened in necessary.

2.4 PREVENTIVE MAINTENANCE PROCESSING

PREVENTIVE MAINTENANCE ACTIVITY MODULE

This module shall provide functions to specify periodic maintenance routines and maintain a planned schedule for specified equipment items and facility components. The PM activity module shall store all information and/or interact with other system modules and files necessary to automatically generate scheduled work orders. The PM activity file or similar files shall be the main transaction medium for performing the minimum functional requirements.

The COMPANY Planned Maintenance Module allows users to specify periodic maintenance routines and schedule maintenance repairs on a scheduled basis. Recognized for the flexibility we offer, the PM Module of the COMPANY solution allows the user a better implementation, tracking and method to record maintenance of all equipment.

The COMPANY Preventive Maintenance Module also include, but is not limited to the following features:

COMPANY's Preventive Maintenance System minimum level of operation includes the required ID number, general task description, start date and scheduling basis. COMPANY also provides additional options to include but not limited to additional free form text to describe additional detailed procedures associated with the PM. COMPANY also supports a complete BOM and the ability to establish links to associated documents including safety notice, CAD drawings, manufactures' specifications or scanned documents.

COMPANY allows for multiple PM scheduling frequency and methodologies to include time, hours, unit measure, appointment or mileage. All PM codes are user definable , modifiable on-line or globally for multiple or individual items. Any PM routine can be easily copied using the COMPANY replicate feature. This will allow minimum data entry and reduction in errors.

Fixed interval PM's routine may be based on either completion date of last PM or the original schedule date. All routines are user definable and modifiable.

When a PM work order is defined and has been entered into the COMPANY systems, COMPANY will automatically schedule, track and alert user of PM's based on pre-defined scheduling.

COMPANY will globally roll-up coinciding PM work orders based on deferred maintenance demands (e.g. monthly into quarterly, quarterly into yearly).

COMPANY's Work Order Module allows start and stop dates based on seasonal cycles. These dates may be calendar based, time, hourly, unit of measure, mileage or user-definable scheduling.

COMPANY allows for printing of reports detailing PM's that are scheduled based on a date range or by individual work order. This powerful feature allow managerial staff to better allocate assets, personnel and provides a forecasting tool.

COMPANY will produce summary reports of PM's by a given crew and/or craft/trade, group or artisan to facilitate simple repetitive PM's.

SCHEDULE PREVENTIVE MAINTENANCE WORK

This function shall provide for scheduling of all PM work assignments due for any given calendar period of time, on unit-of-measure (hours, days, etc.) meter count. This procedure shall also create a new work order in the work order file with a system assigned work order number.

The COMPANY Preventive Maintenance Module schedules all preventive maintenance based on a numbers of available and user definable options to include but not limited to time, date, mileage, meter reading, units of measure and usage. PM work order are system created and fully modifiable based on user rights.

PREVENTIVE MAINTENANCE PROJECTIONS

This function shall provide the capability of projecting the PM workload. It will include labor hours, materials, and special tool requirements. PM projection schedules shall be modifiable by the user as needed to produce a work schedule that is balanced with the available resources.

The PM Work Order produces workload schedules based on labor hours, parts/materials, special tooling requirements as well as alerting user of "Hazardous" materials involved. The work load projection schedules are user modifiable to produce optimized schedules based on availability of the components (labor, parts, materials, etc..).

PREVENTIVE MAINTENANCE WORK ORDER QUERY/EDITING

Once created, all PM work orders shall be available for query, editing, and printing. The operator shall be able to change the status of a PM work order and to edit other preprinted-assigned (and operator entered) work order data elements as necessary. The PM work order shall be distinguished from other, corrective work orders by a type classification (e.g., PM).

All PM work orders are available for editing, modifying, printing and batch updating. Control of all portions of the PM work order are a function of the operator and user based rights. PM's are distinguished from other type work orders by a "P?", "M?", or a "S?" designator.

PREVENTIVE MAINTENANCE WORK ORDER TRACKING

The desired functionality shall include full tracking of each PM work order with all collected information and costs (labor, material, other), through and including the completion process.

The COMPANY solutions allows for complete audit trails and full featured tracking of all work orders, to include PM work orders throughout their life cycle (from initialization to completion and in a final archived form)

PREVENTIVE MAINTENANCE PROCEDURES

The system shall provide for user-developed maintenance tasks/procedures for the maintenance of equipment items and facility components/assets. This task definition function shall include equipment-specific measurements, tolerances and tests; frequency; labor hour projections; and estimated material and tool requirements.

COMPANY comes bundled with hundreds of pre-established work order procedures for standard equipment items (air handlers, compressors, heating units, plumbing, computers, servers, medical equipment, etc.) as well as support user defined work order procedures. Additionally, the preventive maintenance work order procedures available from Veterans Administration MP-3, G-29 Series, the American Hospital Association PM series, Emergency Care Research Institute (ECRI), General Services Administration 5850 series can be imported into the COMPANY directly. This gives any management authority the access to thousands of pre-approved procedures for preventive maintenance. These work order procedures can be edited, modified, created independent from the COMPANY solution and imported as well as being available for printing. All work order procedures include task or job procedures to include but not limited to; equipment specific measurements and details, tolerances, frequency, labor hour projections, materials and tools required. The COMPANY solution will also support a relational link to CAD Drawings, blueprints, safety notifications and any other documents that be stored in a scanned format. Total PM Maintenance Guide Text procedures as of the date of this White Paper are greater than 3,000. Other source procedures are available.

PREVENTIVE MAINTENANCE WORK ORDER FORMAT

The system shall provide PM work orders with the same or similar printed format as the standard corrective work order. Users shall have the option to define a PM work order format and make it printable from a menu selection.

The COMPANY solution allows for the creation and design of PM and CM forms without writing computer code. The COMPANY Reports & Form Generators allow a great deal of flexibility in producing specialized or stylized forms for use. COMPANY comes bundled with over 25 predesigned forms that may be used as is or modified. Any form created can be quickly implemented as a menu report option for all users.

Formats from the Veterans Administration MP-3, G-29 series, General Services Administration 5850 models for PM Guides, American Hospital Association PM Procedures for Plant Engineering and Biomedical Engineering, Emergency Care Research Institute PM Procedures, and other formats are directly importable to the COMPANY.

COMPLETING A PREVENTIVE MAINTENANCE WORK ORDER

The system shall provide the capability of completing outstanding work orders and posting the accumulated information to the appropriate files. This process shall be similar in design to that of completing standard corrective work orders.

Closing of any COMPANY work order can be accomplished quickly. COMPANY maintains a "uniform" approach to closing PM and CM work orders. When closed, work order totals and related information are automatically posted to the appropriate files and accounts.

PREVENTIVE MAINTENANCE WORK HISTORY

Completed PM work orders shall be contained in the standard work history file (the same work history file that maintains standard corrective work order history information). The work history shall be easily accessible on-line for a period of at least three (3) years.

The COMPANY solution allows for the storage, retrieval, query and reporting of all work orders stored in a historical or archived files. COMPANY allows for historical files in excess of three years based on user needs and requirements. COMPANY has built in reporting for work orders (PM's & CM's) to facilitate end-of-period and end-of-the-year reporting needs.

PREVENTIVE MAINTENANCE WORK ORDER REPORTS

The system shall provide a variety of standard PM reports on active and completed work. In addition, it shall provide the options to modify the standard supplied reports, to create custom reports, and to save either report to a menu selection. Reporting shall be provided through a report module or similar ad hoc report generator.

COMPANY supports virtually unlimited reporting options. From the end-user point of view, COMPANY comes bundled with an end user Report Generator and Ad-Hoc Query System. With all Data and Type Dictionaries being supplied (included in this White Paper) the System Administrators can create any report necessary. These reports can include any and all fields in the system, computations, sub totals and totals. These limitless reporting features make the COMPANY solution a powerful tool for both Managers and End-Users. Any report created by an end user can be easily implemented as a standard menu option.

COMPANY currently offers up to 150 standard, canned reports that are accessible to all end users based on system rights. These reports may be linked to other PC-based applications users. End Users also may develop additional reports through the implementation of the Report Generator and dictionary. All reports may be output in a variety of formats to include but not limited to the following options; printer, screen, or data files that are accessible to and may be incorporated in other PC-based applications. Complemented with the COMPANY Works™ Module, reports using any data field from any screen are rapidly implemented for system users.

2.1.4 PARTS/MATERIAL INVENTORY PROCESSING

PARTS/MATERIAL INVENTORY CONTROL MODULE

The Parts/Material Inventory Control Module shall include all functions necessary for purchasing, stocking, issuing, and maintaining transaction data requirements for inventory materials and parts. The inventory control module shall interface with all major system modules/files to perform the required functions. All material management transactions shall be supported by a thorough and logical audit trail that can be verified via the reporting features of the module.

COMPANY's Parts/Material Inventory Control allows for powerful and accurate control over inventory costs, vendors, locations of items and other related details to include but not limited to:

Inventory transactions to include requisitioning stock, item master records, placing orders with vendors, receiving shipments and issuing and returning inventory to stock are can be audited. All transactions are code-stamped with user, time and date details. The COMPANY Parts/Material Inventory Management Module is accessible from any workstation on the network for performing on-line inquires and order entry functions.

Inventory totals are updated on-line in real time as items are brought in and removed from warehouse, inventory or work order management.

The COMPANY Parts/Material Inventory Management Module allows for the issue of inventory to a particular work order or cost center. Items returned to inventory are reversible at original costs and updates are provided to the associated work order or cost center.

Inventory issued to a work order is automatically posted to the work order record. Issues per work order are accessible via the Work Order Module or the Inventory Module. COMPANY's

data entry screens allow for one to many relationships to include multiple line items for one work order.

The COMPANY Parts/Material Inventory Management Module allows for complete location information to include multiple warehouse locations, stockrooms, shelves and bins. COMPANY also supports inter-warehouse transfers of assets.

The COMPANY Parts/Material Inventory Management Module will value inventory based on actual cost, weighted average formulas as well as user definable costing methods.

COMPANY provides additional inventory information to include:

- * Usage history can be queried by date ranges.
- * Order history to include all related PO's, Vendors, quantities ordered, unit costs, order/receipt dates and lead time.
- * Allows users to define maximum and minimum levels
- * Will generate re-order points based on order/receipt and lead times while supporting a user definable safety stock factor.
- * COMPANY will allow users to define formulas to assist in determining optimum quantities and re-order points.

When inventory re-order level are reached, users have the option to placing item on order. This process creates Requisition or Purchase Order and automatically flags inventory file with "on-order" notification.

The COMPANY Inventory/Asset Management Module offers a full range of specialized reporting capabilities to include:

- a] Inventory turnover
- b] Identify obsolete, slow-moving or excessive stock problems
- c] Any stockout conditions that might occur
- d] COMPANY's expression tables will allow for statistical and standard analysis.

Adjustments to Inventory Systems are supported with full explanatory descriptions and complete audit trails.

PARTS/MATERIAL INVENTORY FILE MANAGEMENT

Inventory file management shall be provided to allow the user to enter, query or edit all inventory module files. Inventory transactions shall automatically update the data files and perform necessary calculations to maintain a real-time accountancy of all material receipts, issues and returns, purchases and vendor transactions.

The COMPANY's Parts/Material Inventory File Management supports user entries, edits, updates and all necessary functions listed.

INVENTORY STOCK ITEM INDEXING

The system shall provide stock item indexing by part number, type and Vendor number by using part number prefixes, or by any user-defined field. Parts/Material Inventory Identification numbers are "Key" or "Indexed" fields. Searches or look-ups and be accomplished by partial searching and wild card searching as well as searching via Vendor, Vendor part number, prefixes or by user selectable fields. Parts pre-fix file defines the type of part that is used. The following fields define the uniqueness of the parts inventory record: National Stock Number or user defined stock number, manufacturers part number, American Electronics Association part

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number or Jedec number (previously called the EIA number), the location field, and the bin number field.

end.