Part III: Appendix

Part I: General Outage Management Information and Philosophies

Purpose of Outage Management

United Cooperative Services (UCS) is a rural electric distribution cooperative serving electric power to over 92,000 meters in the 15 county areas it serves. When operating a rural electric distribution system, outages are commonplace. Combining these two simple facts, it can easily be seen that outages can sometimes be a major source of frustration for the membership of the cooperative as well as its employees. Outage management is the method by which this frustration is mitigated.

Outage management does not necessarily have to be technology driven, but without technologies employed, outage management is very difficult to perform when dealing with a large quantity of members experiencing outages. UCS, by virtue of its service territory, load requirements, facilities and membership is considered a 'large cooperative.' With that distinction, there are many factors that add to the difficulty of efficient outage management. Therein lays the challenge.

The bottom line… outage management is the management of power interruptions, from collecting the calls from the membership, to verifying the restoration of power and every step in between that meets the goals as set by the cooperative.

Purpose of Guidelines for UCS Outage Management

As mentioned in the previous section, UCS is a large cooperative. The potential for growth for UCS is staggering. In order to meet the membership's expectations with respect to outage restorations, UCS must be as specific as possible and plan its methods to allow for efficient outage management.

This grouping of information, called the Guidelines for UCS Outage Management will assist in meeting the challenges of efficient outage management. The intent is to place the 'rules of the game' so to speak, out there for all involved to see. It is understood and expected that these guidelines are 'living' documents. In other words, they will continually change and adapt to the needs of UCS and its membership. The guidelines will also be very key to the continued training program of all involved in the outage management process.

Indices and Goals

It is important to set goals for performance and monitor such performance when dealing with making a process more efficient. Without goals and the measurement of such, there is no way to quantify whether an efficiency improvement has taken place. Additionally, when such processes are 'efficient' by industry standards, it is important to continually monitor the measurements to ensure consistent performance.

As a result of the necessity to monitor performance, data will be stored for every outage call that UCS receives. The information will include the member calling, their account information, the purpose of the call, the time of the initial call and any subsequent calls, any messages they've left on the IVR regarding the outage, the time of outage restoration, the cause and effect of outage, the location of the outage (actual and effect), and weather conditions.

With this base data, several indices will be kept and monitored. The indices will be described below as well as the UCS target for each.

System Average Interruption Duration Index (SAIDI): Total number of member outage hours divided by the average number of members over the timeframe of one year. **The target for UCS is to be at or below 1.5 hours of outage per member per year.**

System Average Interruption Frequency Index (SAIFI): Total number of members involved in all outages divided by the average number of members over the timeframe of one year. **The target for UCS is to be at or below 1.5 outages per member per year.**

Consumer Average Interruption Duration Index (CAIDI): Total number of member outage hours divided by the total number of customers involved in the same outages over the timeframe of one year. **The target for UCS is to be at or below 2.0 hours of outage per member per year.**

Average System Availability Index (ASAI): The percentage of time in the course of one year the system is available to the membership. This is calculated by taking the total amount of outage hours in the year and comparing it to the average number of members' times the number of hours in a year. This will lead to a 'nines' description of the system availability. **The target for UCS is to be at or below the ASAI percentage that corresponds to the SAIDI target of 1.5 hours of outage per member per year.**

Additionally, it is the goal of all procedures with respect to outage management to work well without failure. System redundancy and backup plans must be in place and understood by the necessary parties to be prepared for any situation that may arise during outages.

Description of Outage Management System

There are many complexities about outage management and the way technology and people are involved in the process. This discussion will provide an overview of the complexities of outage management for UCS as well as provide an overview of the different technologies and related systems/procedures are utilized to perform outage management.

To begin, complexities for UCS outage management include volume of calls, diverse system geography, large system territory, employed technologies, interfaces, data quality and consistency, System Operations personnel, line crews, etc. The list is expansive relating to all the complexities that are faced when dealing with outage management. It is therefore very important that the total picture is reviewed as well as each individual part to understand the workings of the system and related parts. Below is a graphic showing how the technologies at UCS work together to produce the desired results for outage management.

UCS OUTAGE MANAGEMENT SYSTEM TECHNICAL OVERVIEW
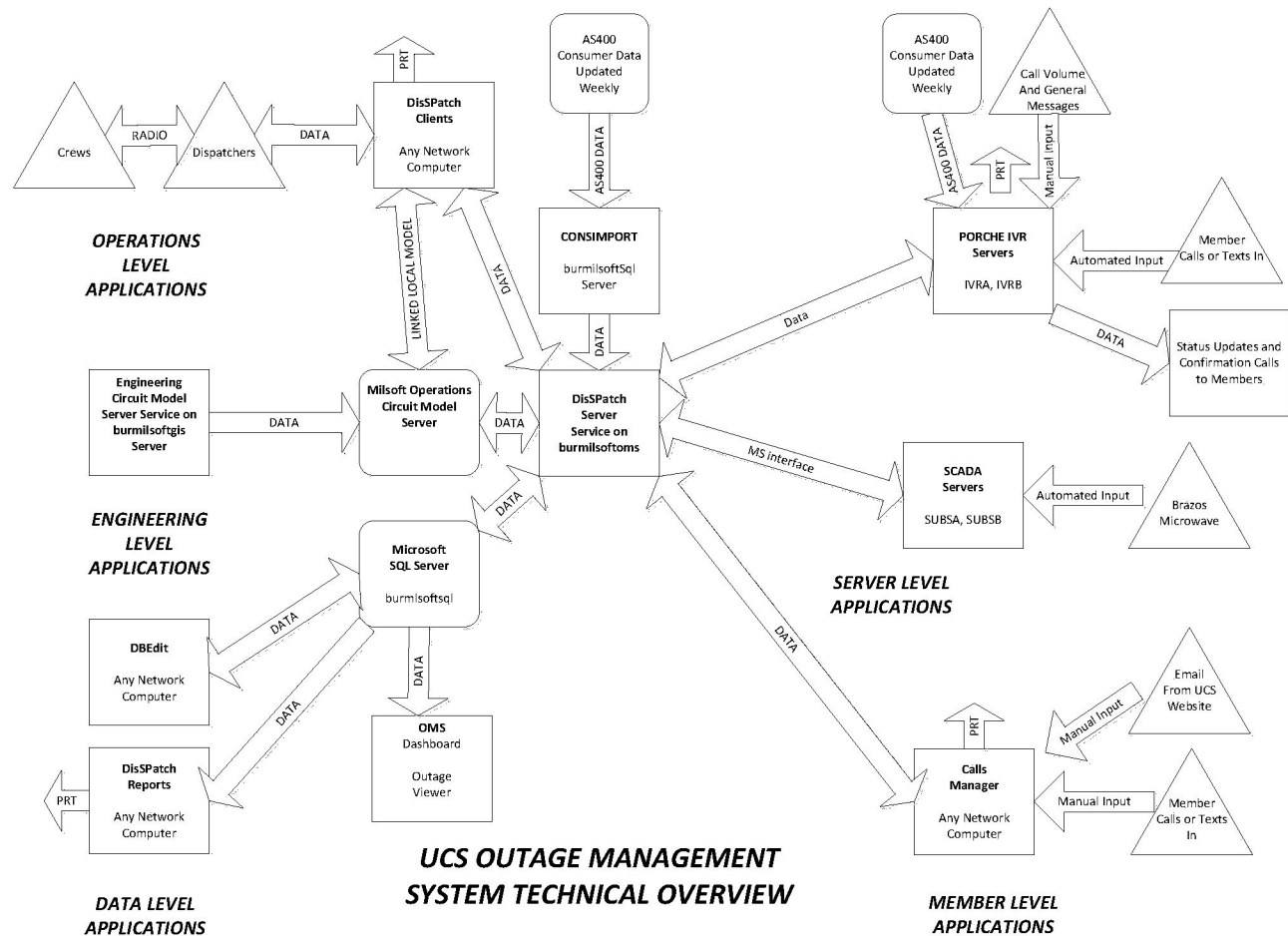
Discussion from this point will be directly from the above graphic. As can be seen in the graphic, there are five general levels of defined applications for the technical description of the UCS Outage Management System: Member Level Applications, Server Level Applications, Operations Level Applications, Engineering Level Applications and Data Level Applications. Each will be discussed below.

Member Level Applications: Generally speaking, member level applications deal with how the member's information is input into the outage management process. There are four basic methods for the member's information to be input into the system: through Milsoft IVR, Milsoft Calls Manager, Outage Texting, and RF outage injections.

The Milsoft IVR is in operation and available to the membership at all times. The Milsoft IVR gathers information from the member's CID information, manually keyed information and voice message format. The Milsoft IVR attempts to utilize the information gathered from the member and match it to account records that are updated weekly from the interface with the Daffron AS400. If matched to a single account, the IVR scripts will prompt the member to enter additional information. Either matched or not, the call information is passed to the DisSPatch Server via the Multispeak interface. Special messages can be recorded for general or specific outages with either piece as described above. Finally, the Milsoft IVR has two scripts implemented for the purposes of gathering member information: Low Call Volume and High Call Volume. An employee, usually a system operator can choose either script with ease using the Milsoft BLS.

The other basic method to collect member information to input into the system is through Calls Manager. Calls Manager is a software program that can reside on any network computer that allows member service representatives and System Operators to enter any member call that operations personnel need to take action on. Additionally, the software allows member service to check the status of individual calls, whether they originated from the Milsoft IVR, incoming member text, RF Injections, or the Calls Manager as well as allows member service to assist with unresolved calls from the Milsoft IVR in larger outages where operations personnel do not have the time to resolve such calls. The Calls Manager directly connects with the DisSPatch Server to keep all of its information up to date. The Calls Manager can work in a stand-alone format if for some reason the DisSPatch Server goes down. When the connection is reestablished, all the calls entered will be passed to the DisSPatch Server.

Server Level Services: Generally speaking, server level services deal with how all applications of outage management process work together to achieve the desired results. The Milsoft SAN server holds the MilsoftOMS, MilsoftGIS, and MilsoftSQL servers. The data is shared between them by utilizing the services within them.

The DisSPatch Server is responsible for ensuring all data transfers to and from the Microsoft SQL Server properly through the database connections. For this to occur, it must track and maintain all software connections that are required as a part of the outage management process; specifically speaking, the DisSPatch Server service is required for Calls Manager and DisSPatch Clients to work together properly. The DisSPatch Server service must be running for the outage management process to work properly as well as the Predictor and IVR services. Data needed from the AS400 to maintain member account records in the required databases is downloaded and updated weekly. This process is the CONSIMPORT process which imports data from the AS400 and merges with the data in the SQL server tables. The utility is then run on a DisSPatch Client to add the data to Calls Manager and the DisSPatch model.

The WebServer Milsoft IVR service is responsible for ensuring the data transfers used in Multispeak interfaces are available. This service must be running on the MilsoftOMS server for the interfaces to work properly. The Multispeak interfaces in use are IVR Call Handling-CH/OA, Survalent SCADA/OA, and RF Injection-OD/OA. The Call Handling server interface is responsible for the transfer of data to and from the IVR system. The SCADA-OA interface allows data transfers between OMS and SCADA. This interface allows the SCADA system to send recloser opens and closes. These messages, when sent and received, will either create a verified outage or restore a verified outage. This interface allows data to transfer from MDMS to the OMS. This outage data is stored in the tables of the Milsoft SQL Database. United's Outage Dashboard does not rely on Multispeak interfaces but does require the WebServer to provided information to the internal and external dashboards.

The WindMil Service resides on the MilsoftGIS server and is written from the Engineering Level Applications to the Server Level Application. The WindMil Database is the storehouse of system connectivity data, basically

the electrical system model and all related devices. This database is very large and thus is replicated on DisSPatch Clients for speed purposes via a linked-local-model process. In other words, the info is shared with the Operations Circuit Model Server which is what the DisSPatch linked local models are linked with.

The Microsoft SQL Database is really the heart of the outage management process relating to technology. The SQL Database is where all information, not including the connectivity model as just discussed, is kept. The SQL Database is a special type of database that allows multiple user access without a slow-down. It is necessary for this type of application to work properly. All of the current and past outage information, member information, member calls and messages, etc. is kept in this database. The DisSPatch Server negotiates between the requesting applications (Calls Manager, IVR Manager and DisSPatch Client) and the SQL Database. There is also a data backup in case of failure of the primary SQL Server.

The Text Power server is linked only to the Milsoft IVR. Incoming Text outages are received from members and then passed through the IVR to Calls Manager. To determine the origin of the call type, "Received by Text" is displayed in the Remarks section on Calls Manager. In OMS it is noted in the Comments field on Outage Manager.

Operations Level Applications: Generally speaking, operations level applications deal with how all outage information is processed from the member to the point of restoration of the outage itself. The operations level applications really hinge around the multifaceted DisSPatch Client(s).

The DisSPatch Client connects to the Operations Server Model on the Burmilsoftoms Server in order to ensure all data is up to date in the DisSPatch Client. This can be done with a single client or multiple clients depending on the required use of the clients. With each client, there is a local linked model as discussed above in which a local copy of the WindMil Database is kept on the client and linked to the server copy to ensure synchronization between multiple clients, if such are loaded.

The general use of the client is as follows. First, calls come into the client either matched or unmatched to a valid UCS account. If matched, the client then plots the calls onto the electrical system model graphically and creates an initial prediction of open device based on that call. Basically, there is a graphical and tabular component to view call and outage information. As new calls come in, they are added to existing calls and re-predictions are accomplished as necessary. Based on collected data, the operations department has to make a decision of what data to pass to the line crew to get the outage restored. This information is passed over the two-way radio system. When the outage is assigned to a crew, such is noted on the graphical and tabular form on the client. When the outage is restored, such information is entered into the client including cause and effect of outage and such data is stored into history for future use. There are a multitude of tools available for aiding in the dispatch of outages via the software. Any of the information can be printed including outages, call tickets, etc.

Engineering Level Applications: Generally speaking, engineering level applications control the engineering model which defines the electrical connectivity of the distribution system. This information is necessary to the outage management system in order to pinpoint consumer locations for plotting as well as predictions and data storage relating to the number of members out in an outage.

The engineering model is kept up by work orders that are completed daily along with map change requests of different forms that are manually created by field employees on an as-needed basis. Additionally, GPS information is being brought in from the UCS pole inspection and underground inspection programs and used to modify the engineering model to its exact configuration. The outage management program's ability to correctly predict open devices creating outages is heavily reliant on the accuracy of the engineering model.

Data Level Applications: Generally speaking, data level applications allow the viewing and manipulation of the data that exists in the Microsoft SQL Server Database as stored by the outage management system. There are three methods to gain access to such data: DBEdit, DisSPatch Reports, and Tableau.

DBEdit is a software tool that can be loaded on any network computer that is very powerful. It provides the ability to view or change any data stored in the database very easily and efficiently. The tool is only available for the administrators of the system to use.

DisSPatch Reports is another software tool, again which can be used on any network computer, which connects to the Microsoft SQL Server that allows the viewing and printing of UCS or Milsoft standard outage reports. The tool links to reports stored on the network and allows selection of dates for reports as well as type of report. Some reports are useful after outages are complete, while some reports may be helpful during outages such as a Priority Member Affected report.

Tableau is a server-based data viewer, utilizing dashboards to visually represent data from various sources. Creators use a desktop version of Tableau to publish data sources and created dashboards to the server. Viewers can access created reports from a webpage, connecting to the central Tableau server.

Outage Dashboard is a web-based outage viewing application. The dashboard uses a landbase similar to Bing maps to display our service area and outages. The outages are plotted using varying colors and symbology to represent the status of the outage. Also, system wide outage data information is listed on the same page. There are two instances of the viewer in place. From the Intranet you can access the internal viewer, which shows all data and history related to outages. From United's website the external viewer can be accessed. The external viewer does not show specific information for each outage other than a list of the streets affected.

PROBLEMS CONTACT LIST

This list is intended to serve as a 'guide' for System Operators and other UCS employees in order to know who to call in case of a technological failure or other unique and severe situation.

*If the problem is a <u>severe failure</u> of any of the systems, processes or severe situation, please contact the Staff level manager that is ultimately responsible for the area of concern and let them know that you have a problem, what the problem is, and that you have contacted the appropriate UCS employee to help fix it. If you cannot locate that supervisor, call Marty Haught or Cameron Smallwood, and relay the same information.

<u>Staff Level Managers and Responsibilities</u>
System Operations Issues: Jared Wennermark, ext.5138, cell.817.648.5927, hm.817.426-0892
Media Disclosure of Severe Situation: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
Outage Software: Cory Menzel, ext.5137, cell.817.648.6354
Radio System: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
SCADA/DA: Jared Wennermark, ext.5138, cell.817.648.5927, hm.817.426-0892
Network System: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
Telephone System: Cory Menzel, ext.5137, cell.817.648.6354
Milsoft IVR: Cory Menzel, ext.5137, cell.817.648.6354
iXp/MyAccount/AS400: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
Major Outage Situation: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
Major Environmental Impact: Jared Wennermark, ext.5138, cell.817.648.5927, hm.817.426-0892
Major Accident: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

<u>System Operations Contacts:</u> If there is some issue needed to be resolved by a supervisor directly relating to shift issues, employee issues, and any other System Operations duties, the contacts should be made in the following order until the issue is resolved. The issue should be able to be resolved by the first person in the below list.
> *Sys Ops Eng Manager:* Bruce Goss, ext.5143, cell.817.253.1722
> *Sr. V.P. of Planning and Procurement:* Jared Wennermark, ext.5138, cell.817.648.5927, hm.817.426-0892

<u>OMS Contacts:</u> If there is a problem with the DisSPatch software on either Dispatch client and you can successfully run the system including IVR interface, please use the working computer until business hours. If the software is not working, you will contact the people in the order listed below. The issue should be able to be resolved by the first person in the list.
> *Engineering Services Employees (next 3 listed)*
> *GIS Supervisor:* Chad Pence, ext.5151, cell. 682.269.0444
> *V.P. IS&T:* Cory Menzel, ext.5137, cell.817.648.6354
> *COO/Assistant General Manager:* Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
> *VENDOR-Milsoft Utility Solutions:* office.800.344.5647, Ask for DisSPatch Support

<u>Radio Contacts:</u> There are several different types of problems that can exist with the radio system. The problems will be broken up into repeater issues, communication line issues, vehicle radio issues, portable radio issues and console issues. Contact the individuals in the order below. The issue should be able to be resolved by the first person in the list in most cases.
<u>Radio Repeater Issues:</u> This problem would be evident if vehicles could not talk to each other on the same repeater on the MAIN repeater channel they are operating on. Additionally, the console would not be able to talk to the radios on that repeater.
> *IS&T Administrator:* Brad Mead, ext.5136, cell.817.648.5906
> *IS&T Administrator:* Yuri Lavadour, ext.4018, cell.817.456.4382
> *IS&T Administrator:* John Huffman, ext.4015, cell.682.228.8141
> *Sr. VP of IS&S:* Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313

COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

VENDOR-DFW Communications: office.972.730.4339, Ask for the DFW Communications dispatcher to send someone to appropriate area, the keys necessary for entry into specific locations in the Cleburne System Operations room for most cases. Some cases exist where Brazos (contact system operator microwave extension 6260) will have to be present if any work is to be done. These repeaters are: Granbury, Stephenville, Grandview, and PK Lake. The Meridian repeater is accessible, but the Bosque County Sheriff's Office (254-435-2362) should be notified of plans to enter the building.

Radio Communication Line Issues: This problem would be evident if vehicles could talk to each other on the same repeater on the MAIN repeater channel they are operating on. However, the console would not be able to talk to the radios on that repeater. The Granbury, Grandview and Stephenville repeater communication lines are completely on the Brazos Microwave. The PK repeater (or Miller Mountain repeater as Brazos knows it) ties through a Brazos-owned unlicensed link and then to the Brazos Microwave. The Meridian repeater communication line ties through an AT&T phone line from Meridian to Waco and then over the Brazos Microwave to Cleburne. A problem indicated by the 'green LED' light should be directed in the following order.

Brazos System Operator: 6260 on Brazos Phone, tell them which repeater communication line is not operating properly and that we need someone to repair such.

IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906

IS&T Administrator: John Huffman, ext.4015, cell.682.228.8141

Sr. VP of IS&S: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313

COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

VENDOR-DFW Communications: office.972.730.4339, If the above steps have not repaired such, ask for the DFW Communications dispatcher to send someone to appropriate area, the keys necessary for entry into specific locations in the Cleburne System Operations room for most cases. Some cases exist where Brazos (contact system operator microwave extension 6260) will have to be present if any work is to be done. These repeaters are: Granbury, Stephenville, Grandview, and PK Lake. The Meridian repeater is accessible, but the Bosque County Sheriff's Office (254-435-2362) should be notified of plans to enter the building.

Vehicle Radio Issues: This problem would be evident if a specific vehicle radio could not talk to another radio, but all other radios are working properly. If this is the case, contact those in this order. One of the mechanics will most likely be able to resolve the issue. While a mobile issue is being resolved, the vehicle can utilize a portable radio.

Mechanic: Jim Bob Nethaway, ext.4067, cell.682.459.9491

Mechanic: Sam Heathington, ext.6136, hm.817-573-8490, cell.817.408.5656

IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906

IS&T Administrator: John Huffman, ext.4015, cell.682.228.8141

Sr. VP of IS&S: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313

COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

VENDOR-DFW Communications: office.972.730.4339, Ask for DFW Communications dispatcher to dispatch someone onsite only in emergency situations where no other option is available. In most any case, the vehicle could take a portable while the mobile problem is being resolved.

Portable Radio Issues: This problem would be evident if a specific portable radio could not talk to another radio, but all other radios are working properly. If this is the case, contact those in this order. While a portable issue is being resolved, the employee can use a different portable radio.

IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906

IS&T Administrator: Yuri Lavadour, ext.4018, cell.817.456.4382

Sr. VP of IS&T: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313

COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

VENDOR-DFW Communications: office.972.730.4339, Ask for DFW Communications dispatcher to dispatch someone onsite only in emergency situations where no other option is available. In most any case, another portable radio can be utilized while the portable problem is being resolved.

Radio Console Issues: This problem would be evident if the console would not operate in any way on any channel or on some specific channel.   It most likely would be a software or Central Electronics Bank hardware issue. The best thing to do is to close down the Elite software that has the problem. Start it back up. Select open and pick the United Cooperative Services 2 file option. The console will reload. If this does not work, call those in the following order.

      IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906
      IS&T Administrator: Yuri Lavadour, ext.4018, cell.817.456.4382
      IS&T Administrator: John Huffman, ext.4015, cell.682.228.8141
      Sr. VP of IS&T: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
      COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
      VENDOR-DFW Communications: office.972.730.4339, Ask for the DFW Communications dispatcher to send someone to the Cleburne office and make sure someone is onsite to allow them to resolve the problem.

SCADA Contacts: These contacts will be needed anytime SCADA communications is lost to a substation or other SCADA RTU. Additionally, if alarms occur that are major system malfunctions (not outages), they need to be reported as well. Contact the individuals in the order below. The issue should be able to be resolved by the first person in the list in most cases.

      Planning Eng Manager: Michael Lattner, ext.5008, cell.817.648.6348
      Sys Ops Eng Manager: Bruce Goss, ext.5143, cell.817.253.1722
      V.P. IS&T: Cory Menzel, ext.5137, cell.817.648.6354
      V.P. of Planning and Procurement: Jared Wennermark, ext.5138, cell.817.648.5927, hm.817.426-0892
      Brazos System Operator: 6260 on Brazos Phone - Tell them what your problem is and that you need Bill Farley, Jon Booth to help resolve the issue as soon as possible.
      VENDOR–SURVALENT: office.855.402.2600, Only call this Vendor if no other option is available. When you call, ask for technical support and describe your problem to the Vendor.

DA Contacts: These contacts will be needed anytime DA communications are lost to a device RTU including downline reclosers and switches. Additionally, if alarms occur that are major system malfunctions (not outages), they need to be reported as well. Contact the individuals in the order below. The issue should be able to be resolved by the first person in the list in most cases.

      Tech Services Supervisor: Bryan Phipps, ext.4011, cell.817.517.9570
      Sys Ops Eng Manager: Michael Lattner, ext.5008, cell.817.648.6348
      Brazos System Operator: 6260 on Brazos Phone - Tell them what your problem is and that you need Bill Farley or Jon Booth to help resolve the issue as soon as possible.
      VENDOR–SURVALENT: office.855.402.2600, Only call this Vendor if no other option is available. When you call, ask for technical support and describe your problem to the Vendor.

Network Contacts: These contacts will be needed anytime the network check program indicates a failure or if any other major PC or Printer failure occurs that cannot wait till the next normal business day. The first three in the list are network employees who should be contacted first, by area. However, any of the three can be called to any area, but please only call on the first two if possible.

      IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906
      IS&T Administrator: Yuri Lavadour, ext.4018, cell.817.456.4382
      IS&T Administrator: John Huffman, ext.4015, cell.682.228.8141
      Sr. VP of IS&T: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
      COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

Telephone Contacts: These contacts will be needed anytime any part of the telephone checking process indicates a failure. The first two in the list are network employees who should be contacted first, by area. However, any of the three can be called to any area, but please only call on the first two if possible.

      IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906
      IS&T Administrator: Yuri Lavadour, ext.4018, cell.817.456.4382
      IS&T Administrator: John Huffman, ext.4015, cell.682.228.8141

Sr. VP of IS&T: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
VENDOR-Blackbox: local office.888.300.2400, Main Tech for UCS-Manny-Cell Phone 214-837-6820, local owner-Jeff Jamison.cell.214.837.7031, Only call if you can't reach any of the above individuals.

Milsoft IVR Contacts: These contacts will be needed anytime the PORCHE checking process does not go as it should or if the system should fail during normal use. Call the contacts listed below in the order listed, the first person should be able to resolve the issue.
GIS Supervisor: Chad Pence, ext.5151, cell. 682.269.0444
V.P. IS&T: Cory Menzel, ext.5137, cell.817.648.6354
IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906
COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
VENDOR-Milsoft Utility Solutions: office.800.344.5647, Ask for IVR Support.

iXp/MyAccount/AS400 Contacts: These contacts will be needed anytime the iXp/MyAccount/AS400 cannot be accessed for any reason. The first three in the list are network employees who should be contacted first, by area. However, any of the three can be called to any area, but please only call on the first two if possible. If none of the first three can be located, contact the IS&T Manager.
Sr. VP of IS&T: Robert Bernhoft, ext.5135, cell.254.396.2718, hm.254.968.7313
IS&T Administrator: Brad Mead, ext.5136, cell.817.648.5906
IS&T Administrator: Yuri Lavadour, ext.4018, cell.817.456.4382
IS&T Administrator: John Huffman, ext.4015, cell.682.228.8141
VP of Accounting and Finance: Russell Young, ext.5224, cell.817.782.8394, cell.817.487.7618
COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582
VENDOR-Milsoft Utility Solutions: office.800.344.5647, Ask for Daffron Support, only call if no other option is possible and the situation is an emergency.

Safety Contacts: These contacts may be needed if there is an accident of any type with an employee in service or any member of the public coming in contact with UCS property. Contact the individuals in the order below, by area first. The issue should be able to be resolved by either of the first two people in the list in most cases for any area.
For CLB, BUR, GBY: Mark Dixon, ext.5126 cell 817.648.5943, hm. 817.295.7887
For SVL, MER, PKL: Brody Weems, ext.6140, cell.254.485.5249, hm.254.764.4233
COO/Assistant General Manager: Marty Haught, ext.5223, cell.817.487.7009, hm.817.484.2582

Environmental Contacts: These contacts may be needed if special action is required for oil spills, etc. This request would usually be prompted by an operations employee. Contact the individuals in the order below. The issue should be able to be resolved by the first person in the list in most cases.
Sr. V.P. of Planning and Procurement: Jared Wennermark, ext.5138, cell.817.648.5927, hm.817.426-0892

System Operations Nightly Checklist

(Checklist should be completed on nightshift, between the hours of 11pm and 2am)

Step 1. Check SCADA

___ Reset any trip targets showing in alarm view. Acknowledge all alarms.

___ Click on the HEADENDS point at the top left of the SCADA main screen, make sure headends shows normal on each point.

___ Verify that all circuits are on normal trips on the DA alt trip and Winter Summary (Cir Winter) screens.

___ Verify SCADA COMM lines and Substation RTUS are reporting properly by visiting the SUB COMMS summary screen. If there are any problems, contact SCADA Contacts as listed on the problems contact list. (sub comm line failure=notify Brazos).

___ Verify DA COMM lines and Device RTUS are reporting properly by visiting the DA COMMS summary screen. If there are any problems, contact DA Contacts as listed on the problems contact list. (DA comm line failure=notify Bryan Phipps).

___ Verify all SCADA reported substation voltages are within reason by viewing the three small, color-coded dots at lower left corner of each substation square on UCSSYS screen. If any are in the extreme (yellow/orange/red) hover mouse pointer over those dots to see the exact voltages; anything less than 124 volts or more than 127 volts is extreme, and you will need to call Brazos to report the hi/low voltage. If you see any colored in Purple, call Brazos immediately.

___ Verify all reclosers are in normal status via UCS AST, Sub HL & DA HL (hotline tag) Summary Screens, and the Sub & DA 1S (1shot) Summary Screens, unless there is a crew or contractor currently working with HLT or 1shot in place.

___ Verify LOMS block points are not enabled (unless prescribed) via both the SUB LOMS and DA LOMS summary screens.

Step 2. Check OMS and BLS.

___ Make sure the server shows Server Online and Predictions enabled in green.

___ Click on 'preferences', then 'outage preferences', verify ETOR box is checked, and the default is set to 2.

___ Open BLS, log in and click on the configuration tab. Make sure there is a red orb next to high call volume, unless it is supposed to be on. If it is currently on the orb will be green, select the checkbox to the left of the orb and press deactivate.

Step 3. Check Outage Viewers.

___ Enter a test outage on UCS account 7782 into Calls Manager.

___ Verify the outage shows on both Outage Viewer Dashboards: Open the external outage viewer dashboard by going to "UCS.net". Open the internal outage viewer by going to "The Circuit", which is the UCS intranet page.

Step 4. Check System Operation's phones.

___ Place a test call to the Dispatch Direct phone line, 817-641-5232.

___ Place a test call to the Dispatch Cordless phone line, 817-447-3670.

Step 5. Enter a test email outage.

___ Go to "UCS.net", then click on Report Outages tab. Scroll down to view Report Outages Online form, fill in the required sections on form and click submit. Check the OutageReportsInbox in Outlook to confirm email was successful, then delete it. If you encounter any problems, email IS&T.

Step 6. Verify all electronic doors show closed and card only via AccessIt.

_____ Select Hardware, then Readers. Scroll through each page to see all doors. If any show other than "closed" and "card only", email IS&T and Maintenance the door name and status. If a group is scheduled to be in the Community Room at the time, that door should show "unlocked"; verify this before sending email notification.

_____ If any exterior doors show open/unlocked without proper cause, contact Safety and the on-call lineman for that area.

Step 7. Check RF injects.

_____ Go to Command Center, under the "Setup" tab in the top left-hand side navigate to "External Integration". Click on "Outage Management Integration – Web Service Based (Detailed)" and check the "Enable Outage Management Integration". Click "Save". This will be done at 7pm Monday-Friday, on Friday it will be turned on at 7pm and run through the weekend. It is to be turned off by Nightshift at 6am Monday-Friday. Refer to the RF Meter Outage Protocol for more information.

Step 8. Check doors, server room temp, and complete checklist.

_____ Check comm room door, and check lobby lights to make sure they are off. Check server room temperature, acceptable temp is below 74°. **If room gets above 74°, setup portable AC and aim hose out the door**; email Maintenance, Shawn Eiler, Brad Mead, and System Operations. Call Mike Huston if temperature does not cool off.

_____ Initial the nightly checklist sign-off spreadsheet located in the Afterhours checklist folder inside System Operations on BURFILE.

Outage Level Guidelines

Due to the complexity of the outage management process, there is a need to define different levels of outage situations that UCS will deal with along with the responsibilities of different individuals throughout the process. The below chart was developed in order to deal with the complexities of differing outage situations. This chart should be utilized by System Operators to guide them in their decisions in dealing with different outage situations.

United Cooperative Services - Outage Level Guidelines

These guidelines have been developed to grade the outage severity level to determine staffing, outage time expectations, internal communications and member communications.

These guidelines do not take into account all variables, circumstances, and emergencies which may dictate other actions.

Note: outages involve many dynamics that must be working in tandem for outages to be handled perfectly including:

(1) SCADA	(4) Radio system	(7) Crew/staffing availability	(10) G&T communication-Brazos
(2) Telephone systems	(5) Call volumes	(8) Radio communication	(11) Substation status
(3) IVR system	(6) Automatic prediction analysis	(9) Member communication	(12) Equipment availability

Conditions	Level 1 Outage	Level 2 Outage	Level 3 Outage	Level 4 Outage	Level 5 Outage
Main cause of outage?	Various reasons for outage	Various reasons for outage	Storms	Major storms/accidents	Major storms/accidents
Expected frequency of occurrence?	Daily possibility	Sporadic	15 times per year	Several years apart	Several years apart
How many crews are out on site calls?	3 crews or less	Enough crews for timely work	More site calls than crews	More site calls than crews	More site calls than crews
How many site calls?	Enough crews for timely work	10 site calls or less for one office/Less than 20 for multiple offices	10+ site calls for one office/20+ site calls for multiple offices	10+ site calls for one office/20+ site calls for multiple offices	>30 outage per office
Possible outage time with sectionalizing capability?	2 hours	2 hours	Greater than 2 hours	Greater than 10 hours	Multiple days
Actions	**Level 1 Outage**	**Level 2 Outage**	**Level 3 Outage**	**Level 4 Outage**	**Level 5 Outage**

Are additional operators needed?	No additional operators	More than 3 crews = additional	*Yes	*Yes	*Yes
Notify Engineering Services for support?	No unless there are software issues	No unless there are software issues	*Yes	*Yes	*Yes
Request CSRs to handle unresolved calls?	No, unless extreme call volume	No, unless extreme call volume	*Yes	*Yes	*Yes
Does the staff need to be notified?	No, unless unusual circumstances	No, unless unusual circumstances	*Yes	*Yes-Emergency action plan	*Yes-Emergency action plan enacted
Notify Communications Dept. for press release?	Not normally	Possibility, dependent upon # of Priority accts affected	*Yes	*Yes	*Yes
Priority accounts contacted by phone?	Priority accounts to be contacted by phone to confirm need for immediate restoration	Priority accounts to be contacted by phone to confirm need for immediate restoration	Priority accounts to be contacted by phone to confirm need for immediate restoration	Priority accounts to be contacted by phone to confirm need for immediate restoration	Priority accounts to be contacted by phone to confirm need for immediate restoration
Priority accounts which cannot be contacted by phone?	Contact and dispatch another crew to priority account	Contact and dispatch another crew to priority account	Contact and dispatch first available crew to priority account	Contact and dispatch first available crew to priority account	Contact and dispatch first available crew to priority account
Use the High Call or Low Call Volume IVR Script?	Low	Low	High	High	High
Other	Scheduled outages may be postponed	Postpone scheduled outages	Postpone scheduled outages	Postpone scheduled outages	Postpone scheduled outages
Damage Assessment				Yes?	Yes – Damage Assessment enacted
Staff and Leadership Team TEAMS Meeting initiated?				Yes – Initial Meeting with possible bi-hourly updates	Yes – Initial Meeting with probably bi-hourly updates

Need for Mutual Aid Evaluated?				Yes?	Yes

*Communication - Expectations

Notification of Engineering Services will be the responsibility of System Operations
Notification of Marketing Department will be the responsibility of Engineering Services
Notification of Staff, Communications and MSRs will be the responsibility of Marketing Department

Depending on the level of outage and the severity of the outage situations, different levels of employees may have to be involved.

When calling crews out, the operator must consider the average time for a member to be restored during the timeframe of which they are dispatching in. If the operator feels that the outage is in level one, two or three, there should be an understanding that the timeframe to restore outages is generally two hours. When this average restore time is being exceeded, the operator needs to contact the area foreman where the outages are occurring along with the Burleson Senior Foreman.

The system operators are responsible to contact the System Operator II personnel when issues arise. When the System Operator II personnel needs further supervisor involvement, he should contact the Burleson Senior Foreman. When the Burleson Senior Foreman needs further supervisor involvement, the next statement applies.

The employee given the ultimate authority to make decisions in operations of the system in outage situations should be the VP of Cooperative Planning and Procurement. In the absence of the VP of Cooperative Planning and Procurement, this duty is assigned to the Sr. VP System Engineering and the Manager of Operations. The COO, CFO and/or the CEO should be kept updated by the VP of Planning and Procurement of any situations that deem their involvement.

In cases where level 5 outages require crews from other utilities to assist in power restoration, the Sr. VP System Engineering, CEO/General Manager, Assistant General Manager, and VP of Power Supply should ensure that the crews are coordinated with Operations and that all needs of housing, food, etc. are met, as necessary.

Manual Outage Management

Due to the fact the outage management system described above has so many possible methods of failure, it is necessary to discuss backup modes of outage management depending on what failure or failures exist in the system that keeps it from working properly. It is important to first establish a totally manual way (or for the most part) to perform outage management. The basic idea is that the Operations Level Application, DisSPatch Client and the items related such as DisSPatch Server are not available for use. This could occur due to upgrades in software causing unknown problems, network failure, server failure, or PC failures in the System Operations room itself. The graphic below gives an overview of the UCS Manual Outage Management System.

```
   Member                    DATA                    MSR
   Call or Text         ─────────────────►          Takes
                                                  Information

   Automated Input                           Manual Input          MEMBER LEVEL
        │                                         │                APPLICATIONS
        ▼                                         ▼

    Milsoft                                  Calls Manager
  Communication                             Not on Server
     Server
                                            Any Network
    PORCHE                                   Computer

        Outage Ticket              Outage Ticket

   Manual Outage Ticket Emailed, Printed, or Delivered to Dispatch Area

                    Outage Tickets                                 OPERATIONS
                                                                     LEVEL
   Tickets Manually Sorted by Ticket Engineering and Location     APPLICATIONS
   Information and Manually Plotted within Partner

                    Open Outages

   Grouped Tickets (Outages) are dispatched to crews for resolving the    DATA    UCS Radio    DATA    Crews
   outages and reporting cause and effect                                         System

                    Closed Outage

   Plotted Information removed from Partner, Closed Outage Ticket
   Stacks Moved to Completed Stack
```

UCS MANUAL OUTAGE
MANAGEMENT OVERVIEW

<u>Member Level Applications:</u> As previously mentioned, member level applications deal with how the member's information is input into the outage management process. In the manual outage management process, there are basically two different modes of getting call information into the format of an outage ticket: by automated methods or by manual methods.

The automated method assumes that the Milsoft Communication Server (Milsoft OCM and IVR) is still operational. If it is, the system will basically be used as it was in the normal outage process. The only difference is that the outage tickets that are printed will actually be passed to the manual sorting and grouping process. If internet accessibility is still working, we will still be able to get the outages from the Outage Inbox.

The manual method has one option to produce an outage ticket. Calls Manager can still be used to produce outage tickets if the rest of the DisSPatch system is not available. The process will not change for the member service representatives from that of the normal outage process. We currently do not print tickets for outages, so Calls Manager setting would need to be changed to send ticket to the System Operations printer.

If the printer is not working in the System Operations area, a printer from a different area should be moved into its place. If the network is not working which does not allow tickets to be printed in the System Operations room, the AS400 will also most likely not be available. In this case, Calls Manager or the Emergency UCS Outage Program can be used and tickets can be hand-delivered or delivered via Fax.

As a result of the member level applications, an outage ticket will be produced and will be passed one way or another to the operations personnel.

<u>Operations Level Applications:</u> Generally speaking, operations level applications deal with how all outage information is processed from the member to the point of restoration of the outage itself. Due to the fact the operations level applications really hinge around the multifaceted DisSPatch client and server communications, if they are not available, there must be another method to handle open outages as efficiently as possible with a manual process.

The tickets will be received as mentioned above from many different sources. Someone should take the responsibility to get all of the tickets from all the different sources (different offices). Once the tickets are streaming properly into the System Operations area, someone should have the responsibility to sort the tickets by the engineering and location information that is printed on the ticket. This information is updated to the AS400 from the WindMil Engineering Model on a weekly basis. The AS400 then feeds this information to each of the ticket producing applications as necessary. Due to these two steps, the information printed on the tickets from the applications will mirror to some accuracy what information the DisSPatch system would have had if it were available. The 'sorter' should use the same principles that the DisSPatch system would have used to group tickets into 'outages.' Priority accounts should be tagged with post-it marking flags in the stacks to ensure they are reviewed during the process. The 'sorter' should ensure that the tickets get plotted in Partner by grid location.

At some point in time, Partner will have enough information on it for another person to begin and continue assigning crews to resolve outages until all outages are handled.   This person will be responsible to communicate with and track the crews as they move across the system resolving outages. There may be more than one person doing such work depending on the number and location of outages. As calls are resolved by the crews, this person should ensure the restore time, cause, effect, effect grid, and approximate number of members out was recorded from the crews and should erase the information relating to that outage from Partner.

At this point, the stack can either be 'closed' or can be sent for someone to make call backs to verify if power has been restored. If a ticket exists where the power has not been restored, it should be removed from the stack and re-plotted and re-sorted and re-dispatched to the crew as soon as possible. This total process should continue until all outages are resolved.

Modes of Failure and Possible Resolutions

As stated above, the outage management process is very technology reliant. If one of any host of technologies is not available, there can be problems in the total process. For this reason, a discussion must be present to provide some answers to possible modes of failure of the system and possible workarounds to keep the total outage management process going. As a general rule, *__any time a failure occurs__*, the Problems Contacts List *__must be__* utilized to inform the appropriate personnel of the problem so a resolution can be acquired quickly to minimize the impact on the membership of the cooperative. Modes of Failure can in many cases reduce the outage manage process in-part or completely to the manual process as previously described. Each major mode of failure will be discussed below.

Incoming Telephone Line Failure: This type of failure is present when a telephone service provider simply cannot provide telephone service to any of the UCS offices. The membership, as a result, when calling to report an outage will get either a busy signal or a ring-no-answer. When this failure exists and is reported to appropriate UCS personnel, some type of forwarding must be done at the telephone service provider's central office to reroute all incoming calls from one office into another office. This forwarding is in some cases available for UCS to perform via telephone prompts and in other cases is a tad more difficult due to the fact UCS personnel must have actual contact with the appropriate personnel at the telephone service provider and the forwarding change must be manually done by a field technician. In either case, after the forward is completed, the memberships will know no difference in service.

Interoffice Data/Telephone Line Failure: This type of failure is present when a telephone service provider simply cannot provide the point-to-point connection between any of UCS' offices. Dedicated point-to-point T1 connections exist between Stephenville and Cleburne (2 data, 1 telephone), Burleson and Cleburne (4 data, 2 telephone), and Granbury and Cleburne (1 data, 1 telephone), Stephenville and Meridian (1 data/telephone), Stephenville and PK Lake offices (1 data/telephone), and Cleburne to Glen Rose (1 data/telephone).

With respect to dispatch operations out of the Burleson Office, data and internal telephone network traffic must flow from the other offices to the Burleson Office. When the point-to-point T1's are down, there is no way for this data and internal telephone network traffic to flow as designed. With respect to outages, when a remote office T1 link is down, there is no way for Calls Manager to communicate with the DisSPatch Server nor is there a way to produce an outage ticket at the System Operations printer. When this occurs during the daytime hours, the office that is disconnected from the Burleson Office should continue to use Calls Manager but without posting the outages. The member service representative should select the member account that is out as if they were to post an outage, but manually print the ticket and then cancel the pending call. This will produce an outage ticket without posting an outage to the actual system. The outage ticket should then be faxed over to the Cleburne office for manual input into a Calls Manager that is connected to the DisSPatch Server.

In the case where a failure occurs outside of business hours, voice can be rerouted using disaster routing or by pulling a T1 off of the Brazos microwave system and assigning it to voice. However, if a data link fails outside of business hours, the main concern is the inability for the IVRB machine to pass data to the OMS system. We can also switch data traffic between Brazos and Telco depending on the failure. This situation could cause some limitations but would allow the systems to remain working.

UCS Telephone Switch Failure: This type of failure would be evident in that any call coming into a UCS office would simply not come in or would not be able to route to the correct location. If the outlying district switches cannot reach the main (Burleson Office) then the switch will enter into a local mode unless there is a major outage then the main incoming number to that office would need to be rerouted to the Burleson Office main number as discussed in the possible failures above. If the Burleson Office Switch becomes inoperable, there is a greater concern due to the fact that the Milsoft Communications Server takes a working Burleson Office Switch for Porche and IVR to work properly. In this case, the main Burleson Office Number would need to be rerouted to Cleburne. As long as the T1's are working properly between the offices, outage tickets will still be able to be posted to the outage system as calls are taken. In the case of the Burleson Office switch failure;

there is a telephone line in the System Operations room that does not go through the switch that calls can be made to make the contacts necessary to begin fixing the problem.

Milsoft Communications Server Failure: This type of failure would be evident in that no calls passed to the IVR would be answered. If this occurs, the Burleson Office or Cleburne Telephone Switch will need to be reprogrammed to send calls to the remaining operating IVR. The link between the IVR systems is set up to route calls to the other if only one is down. Engineering Services will contact Milsoft immediately. The application services for the Dialogic and Communication Services can be restarted to restore the communications link. In the case where both IVR systems are down, and a large outage exists, MSRs should be called in to handle the call load until Milsoft can resolve the issue.

Server Hardware/Software Failure: This type of failure would be evident by the DisSPatch system showing server offline and not being able to be restored. This could occur if software problems became un-resolvable or if there was a total hardware failure at the server level. In this case, the manual process would have to begin as discussed in that section. Milsoft support would need to be notified immediately.

System Operations Room PC/Printer Failure: This type of failure would be easily noticed by operators due to the fact their computer(s) or printer was not working properly. There are four computers with the DisSPatch Client running in the system operations room for redundancy. There are four SCADA machines as well for redundancy. There is only one printer, but can easily be replaced by network personnel if it were to fail. Also, any printing could easily be directed to another printer on the network with ease while the system operations printer is being replaced.

Microwave/Radio Failure: This type of failure would be evident in that the SCADA system would go into failed status, and all RTUs would go to a 'down' state. Also, communications to radio system repeaters from the four radio computers, would not work. Brazos will know right away that the problem exists, but they should be contacted over regular phone to ensure they are aware of the problem as soon as possible. The Brazos phone in the system operations room will not be available to make this call due to the fact it connects over the microwave. For the SCADA/DA functionality, devices will have to be operated manually by field crews. The technical services department in planning should be requested to be 'on-call' if an extended failure is expected to be able to assist with the operations of these devices as necessary.

With respect to the Radio system, without the microwave, the four radio computers will not be operational because their link to each repeater is controlled by the microwave. The computers in the system operations room will need to be placed in 'scan' mode and that radio used for radio communications until the microwave is restored. Mobile radios could be outfitted in the building to handle more local calls if needed in busier times.

If a repeater of the new radio system were to fail, the channel box turns pink indicating the loss of communication. Also, the Recent Calls/Events log will show the channel repeater down in red letters.

Burleson Office Building Disaster: This is the worst case possible with respect to the issues that would be present. About all of the issues listed above would become collectively needed to continue to handle operations effectively. If the case were to occur, the manual outage process would be enabled and the operations shifted to the Cleburne office. At that point the backup system operations center would be brought up using a database backup and existing hardware and software. Milsoft support, Engineering Services and IS&T would make the necessary changes enabling the Cleburne office to be the main point of contact for incoming communications.

Part II: Specific Procedures for Operations of Primary Outage Management System

Description of Primary Outage Management System

The Primary Outage Management System for UCS is illustrated in Part I of this document as well as in the graphic below. The DisSPatch outage system is the center of the Primary Outage Management System for UCS. There are also many other programs, interfaces, people, departments, etc. involved in the Primary Outage Management System in order for it to meet the goals desired to serve the member best. Part II of this document is intended to give guidelines for each major technology where necessary in order for the memberships needs to be met with respect to outage management. The guidelines should be followed by operations personnel in order for the Outage Management System to work as designed. The guidelines as provided in this Part II are not all-inclusive and will be added to as necessary to improve the performance of the total process.

UCS OUTAGE MANAGEMENT SYSTEM TECHNICAL OVERVIEW
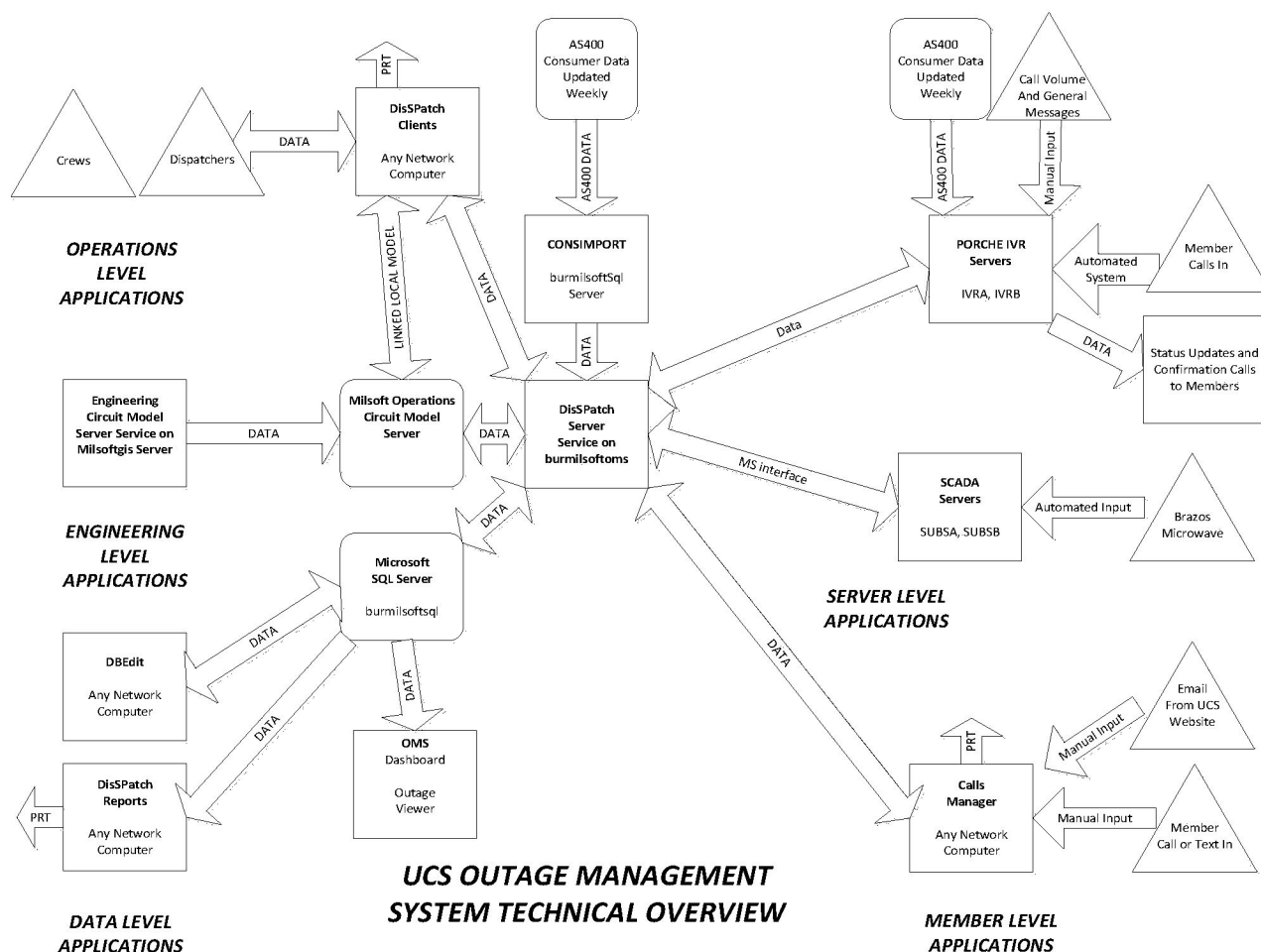
Modes of Operation of Primary OMS

The Primary Outage Management System for UCS will be operated somewhat differently depending on the level of the Outage as listed in Part I and defined below:

As can be seen in the chart on page 18, there are five different outage level classifications at UCS. There have been three categories devised for operation of OMS dependent on the outage level UCS is experiencing. While these guidelines are not concrete, they should be generally followed to keep OMS operating in the most efficient and error-free mode as possible. Additionally, the discussion below is not intended to be all-inclusive of the responsibilities of all the individuals involved with the outages. This discussion should be used with the outage level guidelines as well as logic to make good decisions.

Outage Level 1, 2-: In outage level one or a low two, OMS can be operated from any of the Dispatch client machines for entering, predicting and resolving outages. The operator on duty should be able to handle all outage calls, dispatch crews, answer calls and work the SCADA system. It is expected that only one operator is needed, however, a second and third operator may be called for hands-on training during their first year. Additional employees may be necessary for answering stray calls, and calling linemen as necessary. If additional help is necessary for resolving unresolved calls not matched to an account passed from the Milsoft IVR, MSRs shall be called in. Unresolved calls shall be resolved in Calls Manager using the procedures taught in MSR training. The System Operations II personnel may or may not be called as well as the Division Foreman. There is no expectation to contact any of the staff unless there is a key account outage that requires the call of a member of the UCS staff.
ALT Trips are expected to be turned on if a storm situation is probable. This can be done by individual devices or by the routine that turns all ALT trips on. They should be turned off after probability of storm has passed. If ALT trips are on and a device goes to lockout, the device should be placed in normal trips prior to placing in one-shot and attempting to close.

Outage Level 2, 3-: The System Operations II personnel should be contacted. The decision to contact the District Foreman or the Sr. Foreman should be made by the System Operations II personnel. There may be a need to contact the Manager of Operations and VP of Cooperative Planning in the case of the outage entering into the level three categories.
In outage level two and above, OMS operations should be split into two employees utilizing the either of the four terminals as outage managers for dispatching crews, resolving or closing outages.
The operators will be responsible for handling all crew radio discussion and crew assignments. The operators will use the DisSPatch Client to keep the information up to date as changes/assignments are made as well as close outages as information comes in from the crews.
The operators will assign and manage crews for all outages as received by the outage. The operators will use the truck symbols in the most efficient means possible and must manually delete the trucks when the crews go out of service completely.
A fourth operator will be needed to answer calls, call crews, work SCADA and return calls to accounts restored. Member service representatives shall be called in for the purposes of resolving unresolved calls using Calls Manager.
ALT Trips are expected to be turned on if a storm situation is probable. This can be done by individual devices or by the routine that turns all ALT trips on. They should be turned off after probability of storm has passed. If ALT trips are on and a device goes to lockout, the device should be placed in normal trips prior to placing in one-shot and attempting to close.

The Communication and Marketing departments will need to be involved to print the Priority Outage Status report and make calls to each priority account out to collect and give information regarding their outage. Additionally, Communications will give a script to record any special messages necessary for outage purposes that will be sent using the IVR Notifications.

<u>Outage Level 3,4,5:</u> In outage level high three or above, the Primary OMS operations should be split into three employees utilizing terminals as outage managers for operator crews, resolving and closing outages. A fourth operator will be needed to answer calls, call crews, work SCADA and return calls to accounts restored. The System Operations II personnel, Sr. Foremen and full staff should be contacted. The System Operations II personnel or the Sr. Foreman will use another DisSPatch Client station in order to observe assignments of crews and to give outage information to the operators as necessary. The Communication and Marketing departments will need to be involved to print the Priority Outage Status report and make calls to each priority account out affected by an outage, to collect and give information regarding their outage. Additionally, Communications will give a script to Engineering Services to record any special messages necessary for outage purposes that will be sent using the IVR Notifications. Outage Messages will also be used so members calling in on will hear the recording as well.

Member service representatives shall be called in for the purposes of resolving unresolved calls using Calls Manager.

The operators will be responsible for handling all crew radio discussion and crew assignments. The operators will assign and manage crews for all outages as received by the outage. The operators will use the DisSPatch Client to keep the information up to date as changes/assignments are made as well as close outages as information comes in from the crews. The operators will use the outage tags and truck symbols in the most efficient means possible and must manually delete the trucks when the crews go out of service completely.

The employee given the ultimate authority to make decisions in operations of the system in outage situations should be the Sr. VP of Cooperative Planning and Procurement. In the absence of the Sr. VP of Planning and Procurement, this duty is assigned to the Sr. VP System Engineering/Operations and the Manager of Operations. The COO, CFO and/or the CEO should be kept updated by the VP of Planning and Procurement of any situations that deem their involvement.

ALT Trips are expected to be turned on if a storm situation is probable. This can be done by individual devices or by the routine that turns all ALT trips on. They should be turned off after probability of storm has passed. If ALT trips are on and a device goes to lockout, the device should be placed in normal trips prior to placing in one-shot and attempting to close.

IVR Call Volume – Milsoft OCM Software

The Milsoft OCM has been discussed many times in this document up to this point. This section is intended to give direction where necessary in using the Milsoft OCM. The basic purpose of the IVR is to answer calls quickly and pass correct information to the operators. In the backup modes of outage management, the Milsoft OCM software must be used directly to manage calls by the tickets printed. The IVR system is available to the membership at all times for reporting outages by selection from the main menu of the automated system.

Script Change Procedures: As mentioned in previous sections, there are two script possibilities members will hear when they call into the IVR, High Call Volume or Low Call Volume. The outage level guidelines direct when to use each script. In order to change the script, the operator will use the BLS web interface on any machine. To change the system from Low call mode to High call mode or vice versa, through the BLS interface select Configuration > Schedules > Toggles, select the 'High Call Volume' toggle and either activate or deactivate it.

The main difference between the two scripts is the member's ability to talk to a representative. In the Low mode, they have the ability to transfer out of the IVR whereas in the High mode, they cannot get out of the IVR to speak with a representative.

Printing Procedures: The IVR system does not automatically print a call ticket for every call it logs. To change this option, open the 'Preferences' menu on the Calls Manager software, under the 'Reports' tab check 'Call Ticket' to print any incoming calls to the Dispatch printer. Uncheck this box to resume normal operations. A call ticket can be reprinted by highlighting the call and clicking the printer icon within Calls Manager. The record will print to the default windows printer.

Restarting the Milsoft IVR Server

In the event that Milsoft OCM or the IVR cannot take calls, the communications server can be restarted in attempt to regain the connection.

VNC into burivra
Click on the Engine Icon named MCSAppStatus
Click on the App Status tab
Click to highlight the IVREngine.exe line and then right click
Select Stop

The Chan Status tab should show all of the channels closed.
Do the same in the App Status tab to bring the channels back up.
VNC into clbivrb and repeat the processes above.

If this process does not fix the connection issue, Engineering Services will contact Milsoft Support.

Operating and Restarting the DisSPatch Server Service

The DisSPatch Server Service is installed and running on burmilsoftoms Server.

In the event that the DisSPatch Server or Predictions Enabled are not online in OMS, you need to check on the burmilsoftoms Server and possibly restart it. They would show red wording or a red background.
Access the server from a browser window and type in http://192.168.201.34/
The OMS Server Manager screen looks like this:

OUTAGE

Web Outage Viewer Public
Running

BURMILSOFTGIS

Engineering Circuit Model Server
Running

WebServerPartner Staking
Running

BURMILSOFTOMS

DisSPatch Server
Running

WebServerLandisGyr AMI
Running

WebServerMilsoft IVR
Running

WebServerQEI SCADA
Stopped

MultiSpeak Service
Running

Operations Circuit Model Server
Running

Operations Data Service
Running

Predictor Service
Running

Web Call Server
Running

Web Outage Viewer Internal
Running

Please select a running service to the left
This page will render the service settings.

The Operations Data Service must be running for OMS to work properly.
If the DisSPatch Server wasn't running, the "stopped" would show red.
Right click in the task bar of the server screen. Select Task Manager.

- Under the Services tab, find the milsoft_DisSPatchServer. Right click on the word stopped in the Status column. Select Start.
- The DisSPatch Server will begin running again and clients can be reopened.

The Operations Circuit Model Server and the Predictor must also be running for DisSPatch services to work properly. If either is stopped, repeat the steps you did for DisSPatch services and restart the milsoft_OperationsCircuitModelServer or milsoft_PredictorService.

General Operation of DisSPatch Client

The basic tools in the OMS program to be used in dispatching outages will be the DisSPatch Client Screen (System Map View) and the DisSPatch Outage Manager Screen (Outage Data View)

The DisSPatch Client displays all outage data graphically by circuit connectivity. This view is customizable by the operator. System outages as well as outage details for each outage are displayed. The DisSPatch Client visually displays details pertaining to specific outages.

Toolbars, Buttons and Menus for DisSPatch Client
- A. **Set Verify** – This function is used to Verify the status of an element that is reported by the crew assigned to the outage, or the status reported by SCADA on a SCADA device. The following options are available:
  1. <u>Verified Open</u> – this option is selected when the crew assigned to the outage informs the operator that the specified device is in an "Open" state or if the predicted device is a SCADA device and SCADA shows a "Lockout" alarm
     - a) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box
  2. <u>Verified Closed With Power</u> – this option will be used when
     - a) The predicted device is a SCADA device and there are no active SCADA alarms for this device
     - b) The predicted device, as reported by the assigned crew, is closed with power
       - (i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box
       - (ii) When used, this option will repredict the outage to the downline device or devices
       - (iii) _**Before**_ "Restoring" the device from the "Verified Closed with Power" state, you _**must**_ restore all downline outages from the device
     - c) The predicted device does not have enough calls downline for the operator to evaluate the device as open
  3. <u>Verified Break</u> – this option is performed by a verified open for the following:
     - a) Overhead primary element (OH) when the crew assigned to the outage informs the operator of the grid for that primary element

(i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box

b) Underground primary element (UD) when the crew assigned to the outage informs the operator of the grid for that primary element
(i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box

c) When the connectivity model does not show a device that is in the field, you can use this tool to do the Verified Break on the primary line where the crew assigned to the outage informs the operator of the grid for that primary device
(i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box

4. Verified Closed No Power – this option is selected when the crew assigned to the outage informs the operator that the specified device is in a "Closed" state and there is no voltage coming to the device – this will cause DisSPatch to predict the upline device.

B. **Temp Open** – The Temporary Open **_can only be_** used downline from an element which has already been placed in the "Verified Open" position. This function will only be used to define the actions of the crew in the field assigned to the outage
1. If the time of the Temp Open is different than the time displayed in the "Set Temporary Open" box, the time shall be edited before closing the "Set Temporary Open" box

C. **Temp Closed** – The Temporary Closed **_can only be_** used downline from an element you have already placed in the "Verified Open" position. This function will only be used to describe the actions of the crew in the field assigned to the outage
1. If the time of the Temp Closed is different than the time displayed in the "Set Temporary Closed" box, the time shall be edited before closing the "Set Temporary Closed" box

D. **Temp Break** – The Temporary Break **_can only be_** performed by verifying open downline from an element you have already placed in the "Verified Open" position. This function will only be used to describe the actions of the crew in the field assigned to the outage
1. If the time of the Temp Break is different than the time displayed in the "Set Temporary Break" box, the time shall be edited before closing the "Set Temporary Break" box

E. **Restore** – This function is used to restore the status of an element (Verified Open, Verified Closed with Power, Verified Break, Temp Open, Temp Close and Temp Break) that was reported by the crew assigned to the outage, or the status reported by SCADA on a SCADA device. The following options are available:
1. Normal or No Implied Data - This function is used when the crew assigned to the outage informs the operator that the specified element is in normal operation and the outage for this element has been restored
a) **_Before_** "Restoring" the device that you have placed in the "Verified Closed with Power" state, you **_must_** restore all downline outages from the device **except when crews have isolated area to work, and restored up-line device.**
b) If the time of restoration is different than the time displayed in the "Restore Element" box, the time shall be edited before closing the "Restore Element" box
2. Status has not changed – This option **_will not_** be used by UCS

F. **Crews** – This button will toggle the "Truck" symbols on/off for the assigned crews

G. **Calls** – This button will toggle the "Phone" symbols on/off for the calls received

H. **Weather** – This button is reserved for future use

I. **Outages** – This button opens/closes the DisSPatch Outage Manager Screen which is used to assign crews, close outages and view outage data

J. **Storm Mode** – This button will prevent the OMS from making any new outage predictions from the DisSPatch Server to the DisSPatch Client for the time period specified in "Preferences"

1. This should not be used until there have been enough calls received by the system for accurate predictions or when calls are coming in and you are:
   a) Verifying status changes to circuit elements
   b) Restoring circuit elements to normal
   c) Closing outages
   d) Assigning crews to outages
2. When in <u>Storm Mode</u>, before the system will repredict due to the time period being expired, it will prompt you and ask if you want to continue in Storm Mode. If you answer "yes" the system will continue in Storm Mode for the time period specified in preferences. If you answer "no" it will repredict the outages from the calls that have been received while in Storm Mode. If you do not answer anything, the system will repredict after the timeout period.

K. Alarm Box – This box will be flashing red to inform you when there is any outage or call status change. To mute the alarms, click the down arrow. This will silence all current and incoming alarms, it should be used with caution

L. Color Mode – This box allows you to select the color mode you want to view the model by, the only two options that should be used in System Operations are Color by Outage, or Trace Circuit

M. Recalculate Outage (lightning bolt) In the Analysis menu– This button, when pressed will force the system to recalculate the tags for the number of predicted consumers out on all predicted outages

N. DisSPatch/Work Environment Buttons – This button provides information about Calls, Caller Status, Call Operators, Crews and Outages
   1. This button also provides a listing of all of the substations and circuit and the display status.

O. Locate Customer or Circuit Element (Binoculars) – This button allows the user to locate an element and/or the consumers downline by selecting (highlighting) an element before selecting the locate button or type the element name and press Enter. The following tools are available when this button is used
   1. <u>Perform Trace Circuit</u> – Traces circuit model up and downline from the selected element
   2. <u>Display only customer downline from element</u> – Compiles a list of members downline from the element
      a) Deselecting this item displays all customers
   3. <u>Locate</u> – Locates the element
   4. <u>Go To</u> – Will zoom the model to the location of the element highlighted
   5. <u>Display Customers Downline Containing Phase</u> – Filters the members based on which phase items are selected

P. Zoom Toolbar – This toolbar enables the user to zoom in, zoom out, zoom extents, or zoom to previous screen views

Q. Show Landbase – This button turns Landbase layers on or off. To select Landbase layers use the <u>M</u>ap menu item

R. Display Legend – This button turns on Color Legend for the mode selected in the <u>A</u>nalysis Mode toolbar

S. Server Online, Predictions Enabled and CMS Status: Online– These indicate if the DisSPatch Server is online or offline and able to predict outages.
   1. A **Green background** box indicates that the Server is Online and operating properly
   2. A **Red background** box indicates that the Server is Offline
      a) Check the above services on the burmilsoftoms server by entering 192.168.201.34 into an internet browser.
      b) Restart them by right clicking on the status and selecting stop/start. If this doesn't fix the issue, you can select them from the Task Manager to restart as well.
      c) If the DisSPatch Server will not restart, contact Engineering Services.

T. Hover Menu – over a member in the OMS model
   1. Shows member information eliminating the need to recheck in Calls Manager or iXp.
      a) Member's name, map location and service address
      b) Account number

   c) Cell number
   d) CIS Comments (such as gate combo or dog warnings)
   e) Meter number
 U. AMR – This menu displays various AMR related options.
  1. <u>Get Real-Time AMR Data</u> – This option is used daily by Dispatch to update AMR related information gathered from Command Center within the DisSPatch linked local model.
  2. <u>Display All AMR Meters</u> – This toggle will symbolize all mapped AMR members if a proper AMI integration is found.
  3. <u>Locate AMR Meters</u> – This option will open the 'Locate Customer or Circuit Element' GUI allowing you to filter based on connectivity and AMR availability.
  4. <u>Clear All Ping Request</u> – This removes any currently active ping requests.

Operation of Outage Manager in DisSPatch Client

The Outage Manager displays all outage data in a tabular format that is customizable by the operator. Overall outage statistics as well as outage details for each outage are displayed. The Outage Manager displays all details pertaining to a specific outage.

I. Outage Events – This tab provides outage details for each active outage displayed in the outage grid. The majority of all outage management functions from assigning crews, closing outages to printing reports will be performed from this tab. There are five tabs at the bottom of the Outage Manager when you are on the Outage Events tab
 A. Outage Grid – Displays all active outages sorted by the operator's preference
  1. <u>Search Outage by</u> – Drop down list contains all the possible sort orders for the outage grid
 B. Assign Crew – Allows operators to assign crews or to change crews as needed.
 C. Set Verify – This function is used to Verify the status of an element that is reported by the crew assigned to the outage, or the status reported by SCADA on a SCADA device. The following options are available:
  1. <u>Verified Open</u> – this option is selected when the crew assigned to the outage informs the operator that the specified device is in an "Open" state or if the predicted device is a SCADA device and SCADA shows a "Lockout" alarm
   a) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box
  2. <u>Verified Closed With Power</u> – this option will be used when
   a) The predicted device is a SCADA device and there are no active SCADA alarms for this device
   b) The predicted device, as reported by the assigned crew, is closed with power
    (i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box
    (ii) When used, this option will repredict the outage to the downline device or devices
    (iii) ***Before*** "Restoring" the device from the "Verified Closed with Power" state, you ***must*** restore all downline outages from the device
   c) The predicted device does not have enough calls downline for the operator to evaluate the device as open
  3. <u>Verified Break</u> – this is performed by performing a verified open and is selected for the following:
   a) Overhead primary element (OH) when the crew assigned to the outage informs the operator of the grid for that primary element

(i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box

    b) Underground primary element (UD) when the crew assigned to the outage informs the operator of the grid for that primary element

        (i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box

    c) When the connectivity model does not show a device that is in the field, you can use this tool to do the Verified Break on the primary line where the crew assigned to the outage informs the operator of the grid for that primary device

        (i) If the time of verification is different than the time displayed in the "Set Verify Status" box, the time shall be edited before closing the "Set Verify Status" box

    4. <u>Verified Closed No Power</u> – this option is selected when the crew assigned to the outage informs the operator that the specified device is in a "Closed" state and there is no voltage coming to the device – this will cause DisSPatch to predict the upline device.

D. <u>R</u>**estore Outage** – This button will open the Restore Outage dialog box from which you can restore the outage. The operator has the ability to correct the outage end time from this box

E. <u>C</u>**lose Outage** – This button will open the Close Outage dialog box that is used to close all outages. It is recommended that all outages be closed ***immediately*** after restoring the outage. You are given the following options:

    1. <u>Generate call back</u> – when checked, this will call back all customers that called to report the outage

    2. <u>Truck symbol</u> – Check this box to remove the truck symbol that is viewed on the DisSPatch Client.

F. **Pre<u>v</u>iew Outage** – This button displays the selected outage ticket on screen. You can print the ticket from here by clicking the printer button

G. <u>D</u>**iscard Outage** – This button will open the Discard Outage dialog box which allows the operator to do one of the following

    1. <u>Discard the outage and start over</u> – When selected this option will discard the outage, keep the calls associated with the outage and repredict the outage

        a) This is used when there is a mistake made on an outage and the operator needs to repredict the outage in order to work the outage correctly

            (i) Once discarded, select <u>U</u>tilities from the menu toolbar and choose Refre<u>s</u>h Outage Results which will repredict the outage

            (ii) You may then work the outage correctly and close it

    2. <u>Discard entire outage including calls</u>

        a) This is to be used ***only*** for training purposes

H. <u>E</u>**dit Outage** – This button opens the Edit Outage Times dialog box and allows the operator to modify the Start Time, Event Time or Restore Time of the selected outage

    1. ***Caution***: changes to any of these times will result in changes to the consumer hour calculations on all reports

I. <u>P</u>**ost** – When selected this will post any comments entered in Remarks to the selected outage

J. E<u>x</u>**it** – This button will close the Outage Manager Screen

K. Outage Data Tab – The Outage Data tab allows the operator to update general information   about an outage, assign crew(s) and locate the first and second upline elements for outage trouble shooting. Also, you can record a message for a selected outage. The following tools and data are accessed using this tab:

1. Outage Field – This field provides the outage name, troubled element, status, actions taken, verified cause, est. time of restoration and crew(s) assigned as well as the following tools:

    a) *Record Message* – This button opens a message box. You can custom record messages for an outage on the system that any customer will hear from the IVR when they call in and are associated with the outage. Even if no message is voice recorded, the Milsoft IVR can use a pre-recorded message based on the current outage status.

    b) *Assign Crew(s)* – This button opens the Assign Crew dialog box, which allows you to assign a crew to the selected outage. You may enter an alphanumeric crew ID, the truck type assigned (Pickup, Flatbed, One Ton, Bucket, Pole, Digger or Foreign) and the time they were assigned

2. Customers Field – This field provides the number of customers out initially, number of customers restored, number of customers out now, number of priority customers, number of customers called and the percent (%) of customers that called on this outage

3. Engineering Details Field – This field provides the substation, feeder, troubled element, phase and map location data associated with the selected outage. The following tool is also provided

    a) *Go To* – The two Go To buttons will zoom to and highlight the 1st upline and 2nd upline elements from the troubled element in the DisSPatch Client Screen

4. Remarks Field – This field provides the following tool

    a) *Remark* – This button allows the operator to post any pertinent information associated with the outage that will be recorded with the outage when closed

Customers Affected Tab – The Customers Affected tab shows all customers affected by a predicted or verified outage and may be sorted by column according to the operator's preferences

L. Calls Received Tab – The Calls Received tab is used to view the outage ticket for calls received on the selected outage and listen to messages left in the Milsoft Milsoft IVR for the selected outage. The data columns may be sorted by the field names

5. Call Returned Flag – By setting the Call Returned flag the caller is not sent to any call back list, whether using manual or IVR call back

6. Preview – The Preview button allows you to view a print preview and/or print an outage ticket for the selected outage

Message – The Message button opens a message box, which allows you to listen to messages left in the Milsoft Milsoft IVR system for the selected call

M. Priority Customers Tab – The Priority Customer tab lists the priority customers for the selected   outage and the data columns may be sorted by the field names

Sensor Records Tab – This tab is not currently used

N. Cause Codes Tab – This tab is used to set the cause and equipment codes for the selected outage prior to closing. If an outage is closed prior to setting the codes, you will be forced to use this tab so the cause codes can be set. **If verified on member the outage *will* close without codes.**

II. Unresolved Calls – This tab provides a list of all calls which could not match the phone number with a single account or the caller did not provide their full account or meter number, thus they could not be matched from the Milsoft IVR. It is also possible that they are missing from the electrical model due to the fact that they have not been placed into the engineering connectivity model; historically there have been less than 1% of the customers that are not in the connectivity model. **These can also be under Review Calls** -- Since the DisSPatch system can't locate that caller in the electrical model the call is considered unresolved. Unresolved calls ***shall not*** be resolved from the Outage Manager, use *Calls Manager* for listening to and resolving the Unknown Consumer calls.

III. Review Calls – This tab contains all calls that have been tagged by a Calls Manager as having pertinent information regarding a particular outage. The operator can select the call record from the grid and read the message typed in by the Calls Manager.

K. Preview – The Preview button allows you to view a print preview and/or print an outage ticket for the selected call

L. Message – The Message button opens a message box, which allows you to listen to messages left in the Milsoft Milsoft IVR system for the selected call

M. Mark as Reviewed – After reviewing, these can be marked as Call Reviewed, have notes put on them and saved to the history tables even though you delete them.

IV. **Pending Callbacks** – This tab contains a list of customers that were tagged by a Calls Manager as requesting a call back

    K. Preview – The Preview button allows you to view a print preview and/or print an outage ticket for the selected call

    L. Message – The Message button opens a message box, which allows you to listen to messages left in the Milsoft Milsoft IVR system for the selected call

V. **Outage History** – This tab is used to retrieve outage history for a selected date range.

    K. Outage Data Field – This field allows you to enter the start date and end date of outages you want to select

        1. Retrieve Records – This button will retrieve and display all outages which occurred in the given dates you entered

        2. Search Outage By – This drop-down list contains all the possible sort orders for the outage grid. For example: To sort the outage grid based on the outage name for an outage, select OutageName from the drop-down list. The outage grid will sort based on this field and place this column first.

        3. Discard Outage – This button should be used with *extreme caution*. This button allows you to discard the outage from history. You can choose to delete the entire outage and calls, or delete the outage but keep the calls

        4. Edit Outage – This button allows you to modify event times associated with the selected outage

        5. Outage Reports – This button opens the Select Report dialog box, which allows you to select an existing report for printing

        6. Preview Outage – This button allows you to view a print preview and/or print an outage ticket for the selected call

    L. Outage Cause Codes Field – This field allows you to edit the cause codes entered for the selected closed outage by selecting the Description of the Cause, Effect, Outage Category or Weather and changing the description in the drop down box

    M. Outage Remarks Field – This field allows the operator to edit any information that was entered in the remarks of the selected outage that was recorded with the outage when closed

VI. **SCADA Events** – These are outages that were verified open by SCADA.

VII. **AMR Pings** – This tab contains all current AMR Ping Requests in the system.

    K. AMR Ping Event Records – This section contains all current AMR Ping events, including color coding for the meter's status and relevant member information. Individual records can be double clicked to zoom to the meter on the DisSPatch map.

    L. Logged Events – This text section contains a log of ping requests for the selected record.

Operation of DisSPatch in Level 2 and Above Conditions

To operate the DisSPatch OMS more efficiently during **_Level 2+_** outage levels the following procedures must be followed. To eliminate confusion there will be two clients discussed below (OMS1 and OMS2). The example shows how to split the system into two parts.

I. OMS1 will have all "Districts" turned on in the 'Work Environment'

```
Dispatch   Work Environment

☐─☑ ○  Entire Model
  ☐─☐ ○   Disconnected Elements
  ☐─☑ ⊞ Burleson
  ☐─☑ ⊞ Cleburne
  ☐─☑ ⊞ Granbury
  ☐─☑ ⊞ Meridian
  ☐─☑ ⊞ PK Lake
  ☐─☑ ⊞ Stephenville
  ☐─☑ ⊞ X Scale
```
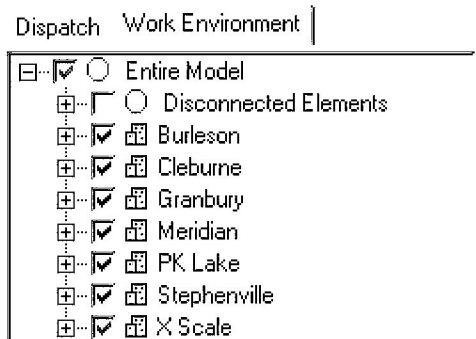
II. When the additional operator(s) arrive

    A. From OMS2

        1. Select the Work Environment tab and verify that all Districts have a check beside them as shown below

```
Dispatch   Work Environment

☐─☑ ○  Entire Model
  ☐─☐ ○   Disconnected Elements
  ☐─☑ ⊞ Burleson
  ☐─☑ ⊞ Cleburne
  ☐─☑ ⊞ Granbury
  ☐─☑ ⊞ Meridian
  ☐─☑ ⊞ PK Lake
  ☐─☑ ⊞ Stephenville
  ☐─☑ ⊞ X Scale
```

(i)
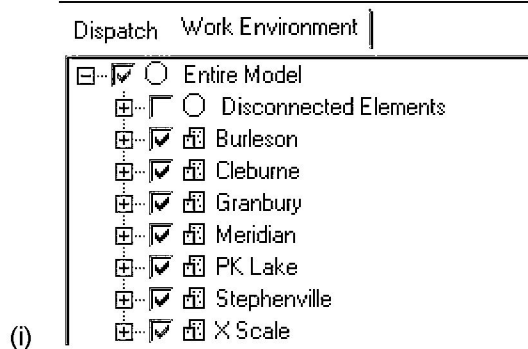
        2. The Outage Manager will be showing all existing outages in all Districts as shown in below

III.

C. The districts will have to be split between the two clients, perform the following procedures and checkpoints to verify that the Districts are split and none are left in the off (unchecked) status

D. Determine which client will dispatch which districts, and then on OMS2 uncheck those that will be dispatched by OMS1. The Client should now only show those districts which have a check mark next to them and the Outage Manager will only show the outstanding outages for the Districts selected as shown in the following view

F. From the Client select the Dispatch tab on the Work Environment to view the Outage Tree and Crews for the selected Districts and begin dispatching for the selected Districts

```
Dispatch │ Work Environment │
┌─────────────────────────────────┐
│ ⊞··· View Layers
│ ⊞··· Call Type Filter
│ ⊞··· Weather Map
│ ⊞··· Call Operators
│ ⊟··· Crews
│        ⊟··· Truck 24
│               └··· 2007-11-14-0014 - 27
│        ⊟··· Truck 27
│               └··· 2007-11-14-0019 - 49
│        ⊟··· Truck 26
│               └··· 2007-11-14-0025 - 27
│        ⊟··· Truck 23
│               └··· 2007-11-14-0055 - 21
│        ⊟··· Truck 22
│               └··· 2007-11-14-0056 - 14
│        ⊟··· Truck 25
│               └··· 2007-11-14-0058 - 43
│ ⊟··· Assigned Outages (6)
│        └─ ☐ 🔲 2007-11-14-0014 - 27
│        └─ ☐ 🔲 2007-11-14-0019 - 49
│        └─ ☐ 🔲 2007-11-14-0025 - 27
│        └─ ☐ 🔲 2007-11-14-0055 - 21
│        └─ ☐ 🔲 2007-11-14-0056 - 14
│        └─ ☐ 🔲 2007-11-14-0058 - 43
│ └··· Unassigned Outages (0)
└─────────────────────────────────┘
```

G. Once the operator has verified that OMS2 DisSPatch Client and Outage Manager have been set correctly, then follow similar action on OMS1 leaving only desired districts checked.

H. The DisSPatch OMS system is now ready for dispatching using split district system from OMS1 and OMS2.

III. When System Operations is ready to return the OMS to normal configuration. It will be necessary to set it up with all Districts on by placing a check in the box next to Entire Model in the Work Environment as shown below.
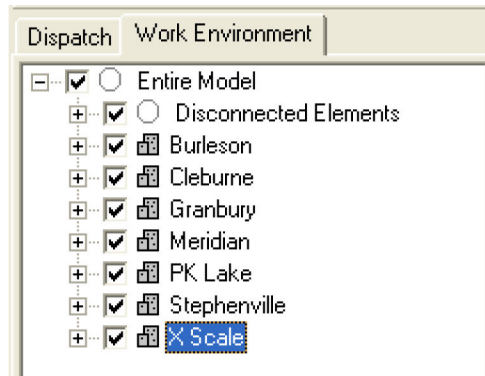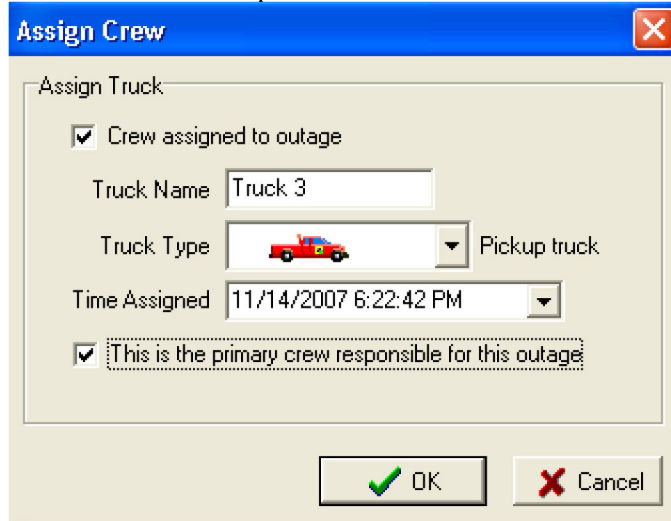
    A. When all Districts have refreshed, uncheck the following Districts as shown below
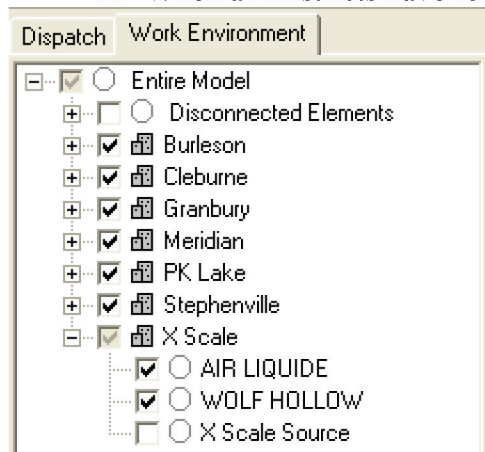
    B. The above process of opening all of the Districts will take a couple of minutes. When completed, check the Outage Manager and verify that the outages for all Districts are now showing on OMS1 as shown in the following window

District	Outage Name	Crew Assigned	Out Initially	Outage Start Time
Burleson	2007-11-14-0043	Truck 14	125	11/14/2007 8:07:21 AM
Burleson	2007-11-14-0028	Truck 12	46	11/14/2007 7:49:15 AM
Burleson	2007-11-14-0095		1	11/14/2007 6:04:06 PM
Cleburne	2007-11-14-0050	Truck 16	28	11/14/2007 8:08:58 AM
Granbury	2007-11-14-0035	Truck 15	82	11/14/2007 7:51:00 AM
Granbury	2007-11-14-0030	Truck 13	151	11/14/2007 7:50:26 AM
Meridian	2007-11-14-0080	Truck 40	36	11/14/2007 3:59:37 PM
PK Lake	2007-11-14-0082	Truck 23	3	11/14/2007 7:45:52 AM
PK Lake	2007-11-14-0088	Truck 22	47	11/14/2007 5:26:10 PM
Stephenville	2007-11-14-0085	Truck 31	19	11/14/2007 7:48:16 AM
Stephenville	2007-11-14-0086	Truck 32	1	11/14/2007 7:48:45 AM

1. The operator at OMS1 will be required to assign the crews to the outages which are moved from OMS2 in order to create the Trucks for OMS1 to view.
2. This will be accomplished by simply viewing the Crew Assigned column in the Outage Manager, select the [Assign Crew(s)] button, the following screen will be opened

3. Place a check as shown [✔ This is the primary crew responsible for this outage] to designate the crew will be assigned as the primary crew and display the truck symbol
4. When all crews from OMS2 have been assigned as the primary crew, OMS1 is ready to begin dispatching the entire UCS system again.

G. OMS2 will now do steps III and III,A above
1. When all Districts are displayed the client has been returned to standard configuration.

Using DisSPatch Client for Switching/Backfeeding

The DisSPatch OMS system will not allow "hot transfers" between circuits or substations. Therefore, in the event that it becomes necessary to backfeed during an outage the following guidelines should be followed.

I. **Verify** – Before beginning a switching procedure you must have the source device for the outage **verified open**. Therefore, you will do a **Verified Open** on **OC1**.

    A. The next step is to perform a **Temp Open** on the device the crew tells you they opened. This temp open will be performed on the circuit that has already been <u>verified open</u> in the previous step **I**.

    B. The crew will then inform you of the device they will close that will backfeed to the device you performed the <u>temp open</u> on in step **A**. You will do a **Temp Close** on the device that the crew has just closed. This will restore the power to the <u>temp open</u>.

    C. To **Restore** the outage, you must first **Restore** the **Temp Close** to a normal open, then you can **Restore** the **Temp Open** to a normal close, when these two have been restored, you may then **Restore** the **Verified Open**.

<u>**We will use the database below to demonstrate the correct switching procedure.**</u>

Let's assume that we get a SCADA lockout alarm on *OC1* in *SUB1* which has 700 customers on it, and we know we can pick up the load and backfeed from *SUB 3*, to *SW11-A* which is normally closed through *SW31-A* which is normally open. We know we can also pick up the load and backfeed from *SUB 2*, to *SW12-A* which is normally closed through *SW21-A* which is normally open.

We will assume that we have opened *SW1-A*, and tried *OC1* in 1-shot and the recloser locked out again. We can then assume that the fault is between *OC1* and *SW1-A*.
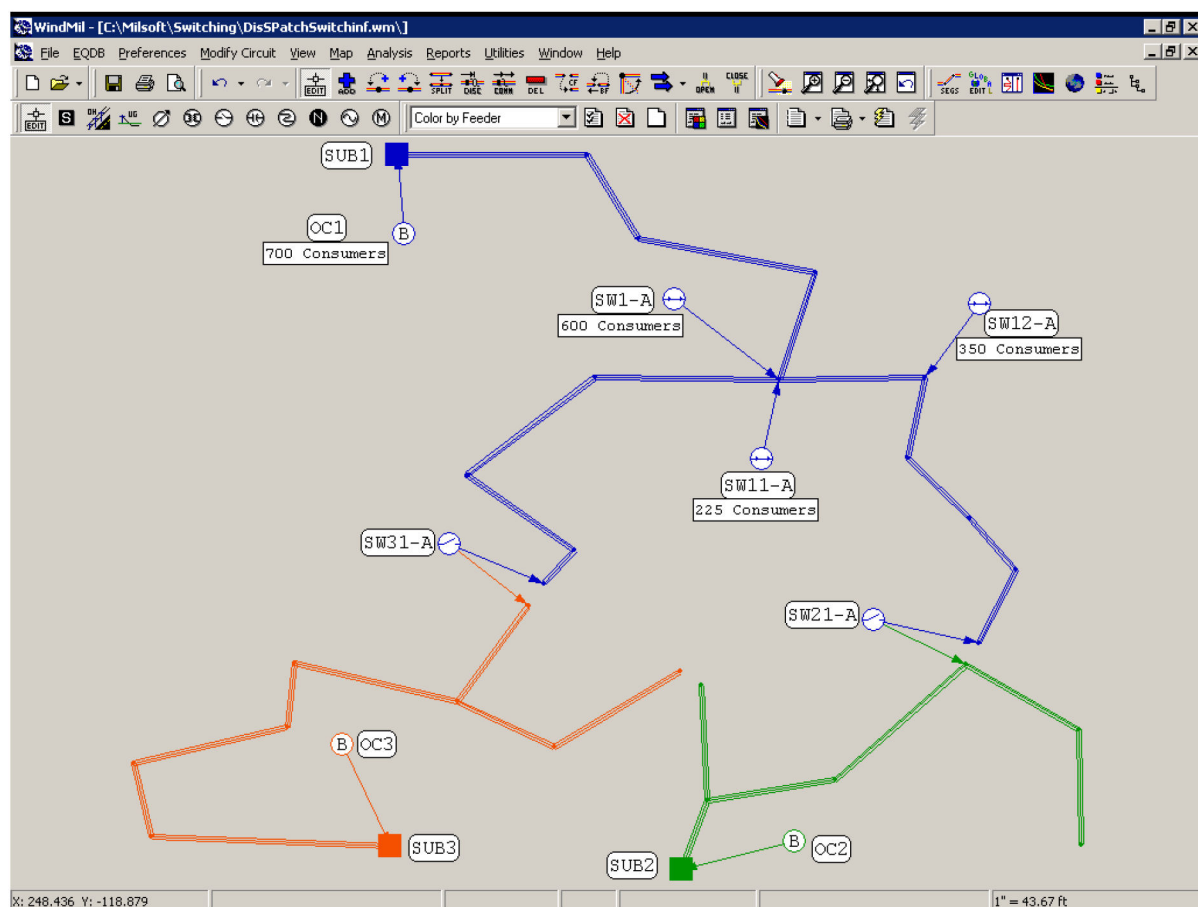
In order to pick up as much load as possible the switching procedure should be similar to the demonstration below. We will then <u>Restore</u> all devices in the sequence required to maintain the proper connectivity in the DisSPatch Model.

Verified Open - OC1 on SUB1, which leaves 700 customers off

Temp Open - SW1-A on SUB1, this will isolate 600 customers

Temp Open - SW11-A on SUB1, this will isolate the line toward SW12-A which has 25 customers on it

Temp Open - SW12-A on SUB1 which will isolate the line toward SW1-A and SW11-A which has 25 customers on it, this will complete the isolation of the primary line between these two switches

Temp Close - SW21-A on SUB2, this will now feed through SW21-A , a normally open switch, to SW12-A on SUB1, this will pick up 350 customers

Temp Close - SW31-A on SUB3, this will now feed through SW31-A, a normally open switch, to SW11-A on SUB1, this will pick up 225 customers

Now you only have 125 customers without power by switching the load from SUB1 to SUB2 and SUB3. When the fault has been cleared between OC1 on SUB1 and SW1-A on SUB1, you are ready to restore the devices to normal. You can restore either SUB2 or SUB3 to normal first, for this demonstration I will restore in the order that we switched the circuits. You will use the restoration times that you received from the crew(s) that was/were assigned to the outage

Restore - OC1 on SUB1, which is in a Verified Open state, to normal, this will pick up the 100 customers to SW1-A on SUB1

Restore - SW1-A on SUB1, which is in a Temp Open state, to normal closed position, this will pick up an additional 25 customers to SW12-A on SUB1. You have now restored 125 customers to their original connectivity

Restore - SW21-A on SUB2, which is in a Temp Closed state, to normal open position (make a note of the time in the "Time Status Changed Window" and use the same time when you restore SW12-A on SUB1)

Restore - SW12-A on SUB1, which is in a Temp Open state, to normal closed position and change the restoration time in the "Time Status Changed Window" to be the same as the time you restored SW21-A on SUB2. You have now restored 475 customers to their original connectivity

Restore - SW31-A on SUB3, which is in a Temp Closed state, to normal open position (make a note of the time in the "Time Status Changed Window" and use the same time when you restore SW11-A on SUB1)

Restore - SW11-A on SUB1, which is in Temp Open state, to normal closed position and change the restoration time in the "Time Status Changed Window" to be the same as the time you restored SW31-A on SUB3. You have now restored all 700 customers to their original connectivity.

If the model doesn't restore the correct connectivity, you will need to run the Consumer Update Utility and close/reopen the model on each client.

Using Closed with Power in DisSPatch
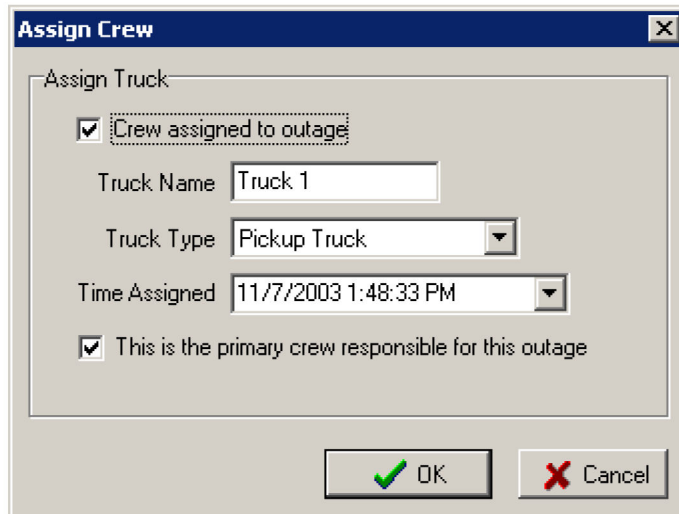
When using the **Verified Closed with Power** option from the Set Verify Status dialog box you must remember the following:

- **Verified Closed With Power** shall be used
  - When the DisSPatch Client predicts a SCADA device to have an outage and SCADA is not showing a lockout for that device
  - When the crew assigned to the outage verifies that the device is closed with power
  - When there are not enough calls for the Operator to evaluate the predicted device as open
- Before you **Restore** the device that you have placed in the **Verified Closed With Power** state
  - **All** outages that are in downline connectivity from the device **must** be **Restored**
  - **All** outages that are in downline connectivity from the device **must** be **Closed**
- If the procedure above is not followed, when you Restore the Verified Closed With Power, the prediction engine will repredict outages by the calls downline from the device that have not been Closed
- If a device has been placed in the **Verified Closed With Power** state and either the crew assigned to the outage reports that the device is open or SCADA alarms show that the device is locked out, use the following procedure
  - The operator shall use the **Verified Open** on that device to change the status from Verified Closed With Power to **Verified Open**
    - **Do not Restore** the device to normal before placing the device in the **Verified Open** state

Crew Management and Tracking with DisSPatch Crew Assignment Functions

The Assign Crew(s) button opens the Assign Crew dialog box, which allows you to assign a crew to the selected outage. This procedure will be done immediately following the actual assignment of the crew by radio from the operator. When assigning the crew the following information will be provided to the crew
- o Outage Name
- o Calls Received
    - ▪ Name (Consumer Name)
    - ▪ Address1 (Service Address), if provided in OMS tabs
    - ▪ Element (Grid Location)
    - ▪ Meter (Meter Number)

- o Enter the numeric truck number followed by lineman's name in all caps.
- o Assigning a crew does the following:
    - ▪ Changes the outage row color from white to yellow in the Outage Manager outage grid and in the Open Calls Tab in Calls Manager
    - ▪ Creates a time stamped remark reflecting the crew assigned to this outage
    - ▪ Creates a truck symbol at the troubled element location based on the truck type selected (Pickup Truck)
        - • This truck symbol may be manually moved to any future outage that the crew is assigned to by selecting the truck with the left mouse button and while holding the left button down, move the truck to the desired location
        - • This truck symbol will only be removed from the screen if selected with the mouse and then left click on the mouse
            - o From the dialog box, select Delete Truck
    - ▪ Changes the outage tag's background color from white to yellow
    - ▪ Creates a new crew entry in the outage list tree view in the work environment with the outage name the crew is responsible for
    - ▪ Displays a truck symbol on the outage name in the outage list in the work environment to show a crew is working on this outage.
- o When an outage is **Redefined** the OMS system will alarm notifying the operator that there is a new predicted devices/elements. The operator will give the new info to the crew(s) that was/were assigned to the outage. If an outage is verified downline of what's predicted, as in predicted fuse but it's actually the members' side, OMS will give it a new outage name. The operator would then give the new outage number to the crew(s) and reassign the outage.

How to Correct Mistakes Made When Processing an Outage

The following will define how to discard an outage that the operator has made mistakes on and how to redefine the outage for the corrections.

- This Procedure will be performed from the Outage Manager Screen

- Select and Press the Restore Outage Tab for the outage that has the mistakes
  - This will change the grid color on the selected outage to green indicating the outage has been restored
- Select and Press the Discard Outage Tab and the following dialog box will appear

- From the "Discard Outage" dialog box, select "Discard this outage and start over. (Keep all calls associated with outage and repredicts)"
  - This action will delete the entire outage and repredict the outage from the calls received
- When the system has repredicted the outage, you will now proceed to work the outage correctly; the following steps will need to be followed to ensure correct outage time calculations
  - Edit the Verified and Restored times to the actual time that these events took place. This is done by entering the appropriate times in the dialog boxes provided, i.e. This will allow the outage to be closed with the correct data

Restore Element ☒

Device – OC3128581293001

Set Outage Status (1-Phase Operation)

☑ All Phases The Same

	Current Status	Set New Status
Phase A	Verified Open	Normal Or No Implied D ▼
Phase B	Verified Open	Normal Or No Implied D ▼
Phase C	Verified Open	Normal Or No Implied D ▼

Time Status Changed

12/8/2003 12:00:43 PM ▼

✓ OK   ✗ Cancel

How to Handle Outages with Connectivity Problems

The connectivity issues that may arise and will be addressed are incorrect map location for consumers and/or devices, or missing consumers and/or devices.

- **Consumers with Connectivity Issues**
  - **Consumers Incorrectly Located** in the DisSPatch database
    - In the event that the consumer should have been included in a multiple consumer outage and was not included in the outage, i.e. transformer, fuse or recloser
      - Close the consumer as an individual outage with the correct outage times for the outage
      - Make notes on the consumer's outage ticket, including the OutageRecId of the outage that the consumer should have been a part of
    - Make notes on the outage ticket of the correct grid that the crew provided from the field and do a print screen showing where the consumer should be located
    - Complete a Map Change form and attach it to a copy of the ticket that you had for this outage with details of what needs to be done to correct the connectivity
    - Deliver these forms to Engineering Services for corrections to the model and database

  - **Consumers Missing** from the DisSPatch database
    - Make notes on the outage ticket of the correct grid that the crew provided from the field and do a print screen showing where the consumer should be located
    - Complete a Map Change form and attach it to a copy of the ticket and print screen that you had for this outage with details of what needs to be done to correct the connectivity
    - Deliver these forms to Engineering Services for corrections to the model and database

- **Devices with Connectivity Issues**
  - **Devices Incorrectly Located** in the DisSPatch database, i.e. Reclosers, Fuses, Switches, Capacitors, Regulators and Transformers
    - Perform a "Verified Break" on the primary line section that is at the location where the device should be located
    - "Restore" the "Verified Break" and close the outage when the crew has restored the device
    - Make notes on the outage ticket of the correct grid that the crew provided from the field and do a print screen showing where the device should be located and which direction it feeds
    - Complete a Map Change form and attach it to a copy of the ticket and print screen that you had for this outage with details of what needs to be done to correct the connectivity
    - Deliver these forms to Engineering Services for corrections to the model and database

Operation of Calls Manager

Calls Manager is a visual display for manually entered outage calls, IVR automated incoming outage calls, and Text outages from members.

Basic Operation of the *Calls Manager* provides for quick and efficient entry of outage information from manual telephone calls into the Outage Management System, while also providing outage information for the call taker as feedback to the customer reporting an outage.

- **Starting Calls Manager** – Double click the left mouse button on the Calls Manager Icon that is on the desktop display on your PC.
    - Calls Manager will then provide the following Login box
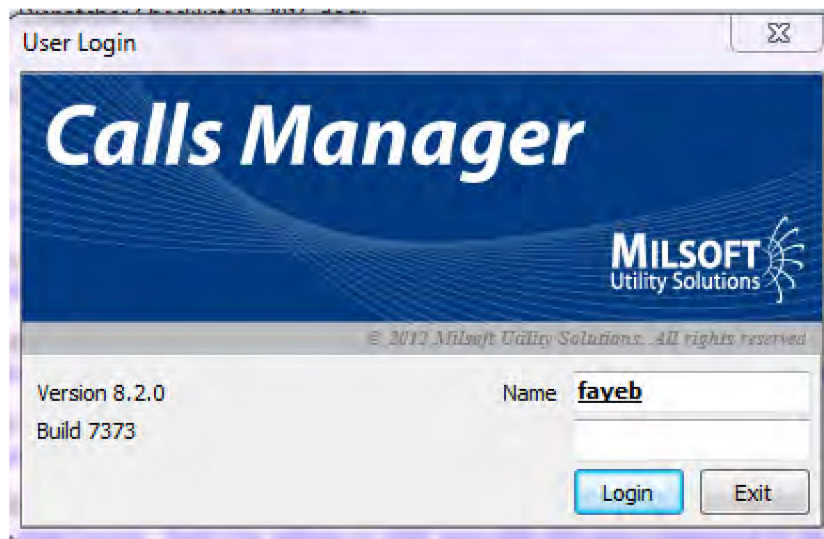
- Type in ucs\ and your login name if the default is not there.
- Enter your windows password if it requires one.
- Calls Manager will open to the Calls Open Tab

- **Calls Manager Menu** – The following options are available from this menu
    - **Call** – This menu has the following options
        - New Call – This option selects the New Call Tab which will allow the user to begin entering a new call
        - Post – This option enters the new call into the Outage Management System
        - Cancel – This option will discard the selected call and not enter it into the Outage Management System
        - Refresh Calls – This option will refresh calls from the server
        - Refresh Customers – This option will download a new copy of the customer database from the server
        - Preferences – When selected the following screen will appear
        - Change User/Login – Will open the Login dialog box and allow a different user to operate the Calls Manager workstation
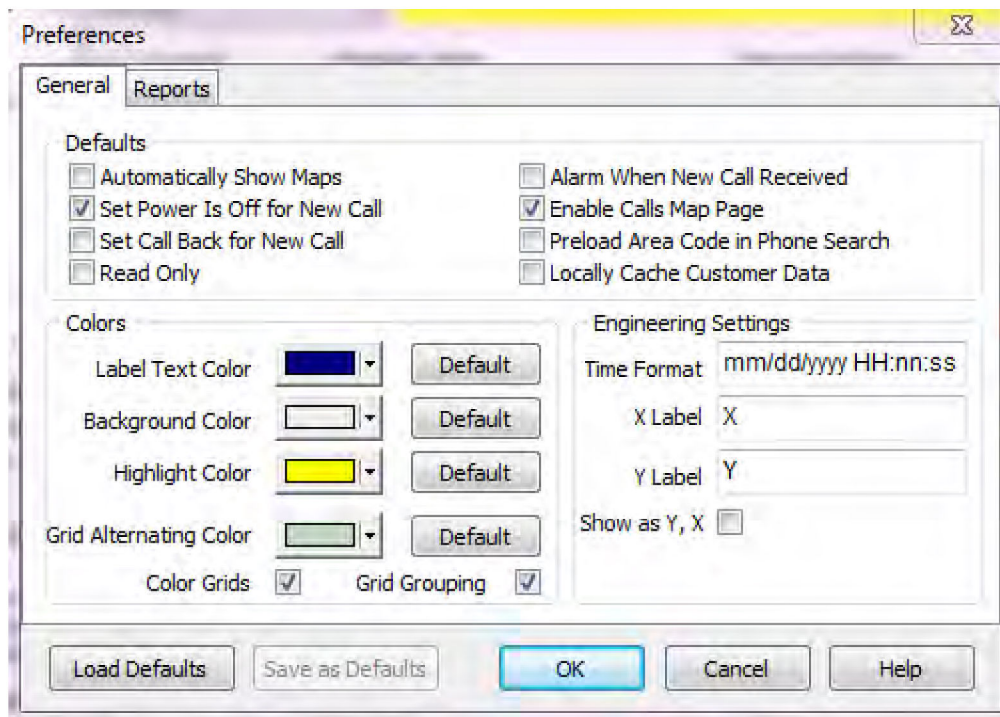
- **General** – This tab screen will allow the user to set any of the preferences which will be saved to their PC and used each time the Calls Manager is opened

  - *Automatically Show Maps* will load maps automatically when a page containing a map is selected
  - *Set Power Is Off Flag for New Call as Default* – This box should be checked and will automatically select the "Power Is Off" checkbox in the Checklist for each new call entered
  - *Set Call Back for New Call as Default* – This box should not be checked *Download Customer Database as Needed* will allow the Calls Manager to load new customer data as it is updated in the customer database
  - *Read Only* – This is if the user will have limited access.
  - *Alarm when new call received* – This box should not be checked.
  - *Enable Calls Map Page* – This box should be checked and it allows the Calls Map tab to display and be selected
  - *Preload Area Code in Phone Search* – This box should not be checked
  - *Colors* can be set for Text Labels, Background, and Highlight. The Default button will reset them back to system default colors
  - *Engineering Settings* – This data should not be changed
  - *OK* saves and applies any changes made to the Calls Manager
  - *Cancel* restores the previous settings and exits Preferences
  - *Load Default* will load all system defaults for the Calls Manager from the server
  - *Save as Defaults* will save the current Calls Manager settings as the system default. This save feature is only enabled on the operator's console

- **Reports** – This tab screen will allow the user to set the following preferences which will be saved to their PC and used each time the Calls Manager is opened
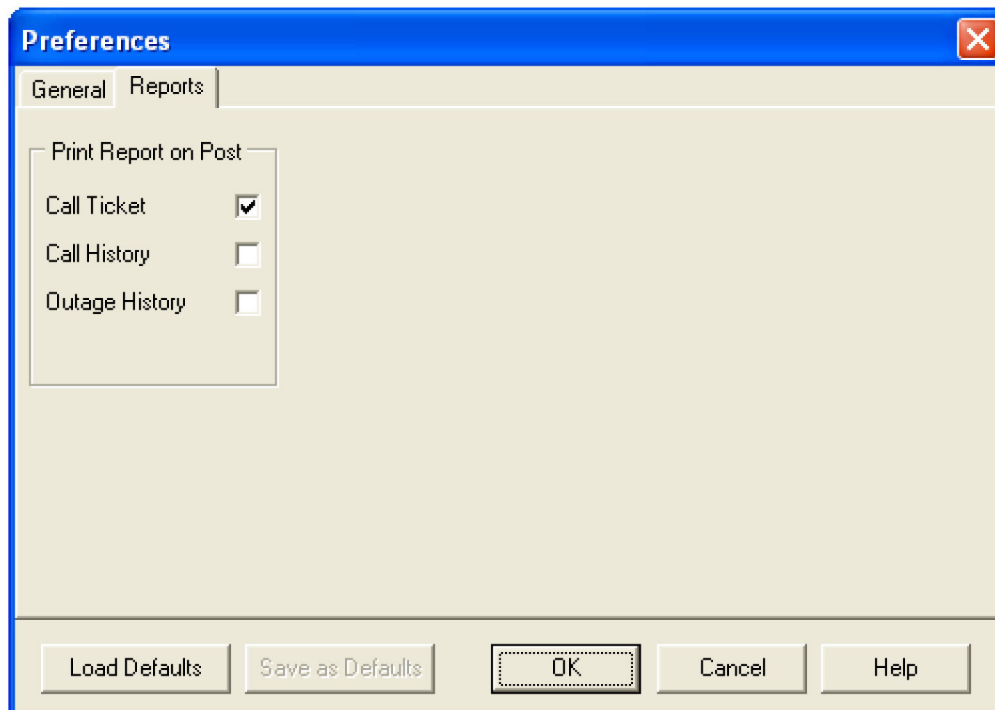
- *Print Report on Post* will print the checked report each time a new call is posted. We currently do not print during standard operation, but would need to check this if we entered a manual process.
  - *Call Ticket* is the only box that should be checked during manual outage process only
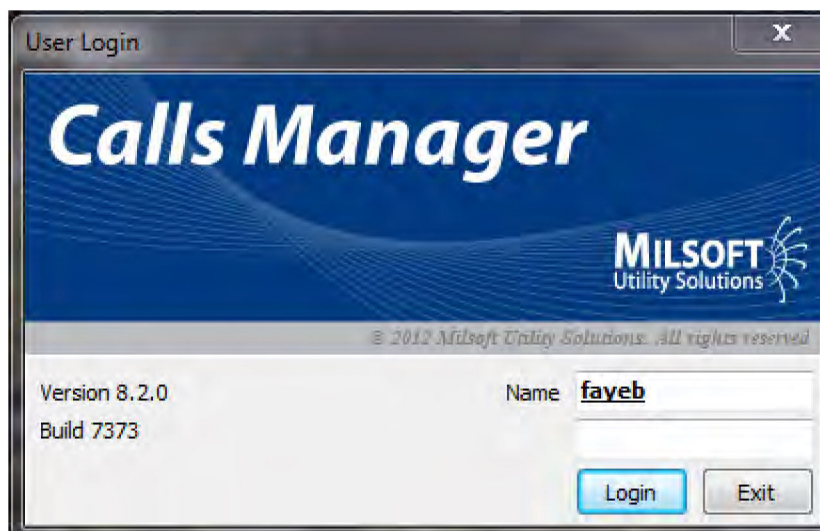
- **Exit** closes the Calls Manager program

- **Map** – This menu has the following options:

  - Show Map: turns on the attached map files and displays them within Calls Manager
  - Zoom to Map Extents: zooms to the extents of the map
  - Zoom In: Zooms in for a closer look at the map
  - Zoom Out: Zooms out to give the user a larger view of the service territory
  - Zoom to Fit sizes the map to fill the entire display window
  - Connect Layer… uses the standard windows "File Open" dialog box for connecting a map
  - Clear Map disconnects all map layers from the Calls Manager
  - Map Properties… allows the user to display and edit the properties of the connected maps
  - Map Background Color allows the user to modify the map background color
  - Copy Map to Clipboard copies the current Calls Manager maps and any dialogs in the view to the clipboard to allow pasting into another application

- **Reports** – This menu has the following options
  - Call Ticket will print or preview a call ticket for the selected call
  - Calling History will print or preview the caller's calling history
  - Outage History will print or preview the caller's past outage history
  - Calls Open will print or preview a list of all the calls currently open
  - Customer List will print or preview a list of all the customers in the customer database
  - User Report 2 through 4 will allow new custom reports to be added to the Call Manager

  - Page Setup will allow the page setup for reports from the following screen
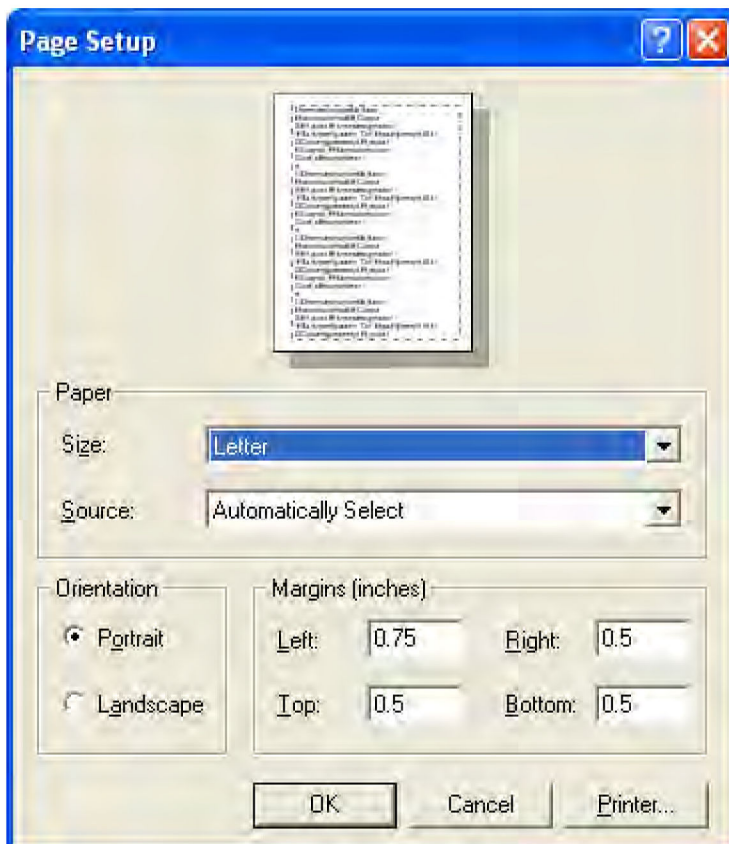
- The printer settings are changed by using the **Alt P** command or by using the Printer button from the above screen. The settings should show the current system operations printer.
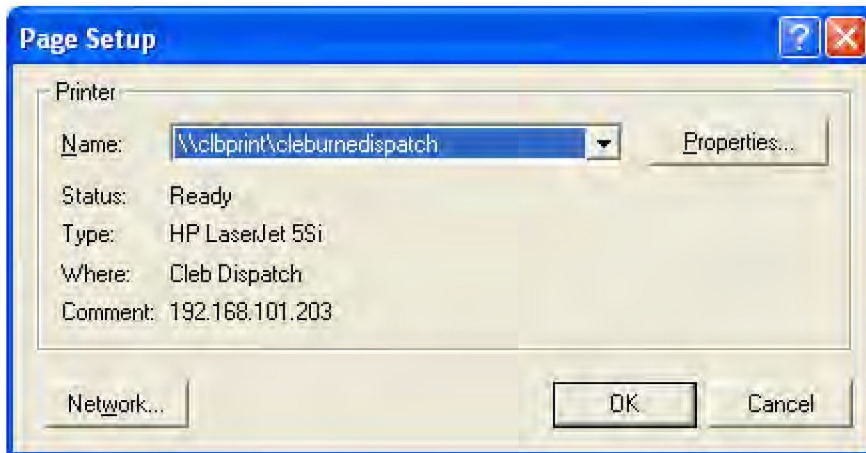
- Settings opens the same dialog box as the Preferences… option under the Call option
- **Edit** – This menu has the following options:
  - Cut allows the user to cut text information to the system clipboard
  - Copy allows the user to copy text information to the system clipboard
  - Paste allows the user to paste text information from the system clipboard
- **View** – This menu has the following options
  - Toolbars allows the user to select the toolbars they want to see on the Calls Manager menu, the following toolbars are available
    - *Calls Toolbar:*
    - *Edit Toolbar:*
    - *Map Toolbar:*
    - *Print Toolbar:*
    - *Clock Toolbar*
  - New Call will open the New Call Tab:
  - Calls Log will open the Calls Open Tab:
  - Calls Pending will open the Calls Pending Tab
  - Calls Map will open the Calls Map Tab:

How to Enter a New Call
- Select the **New Call** tab at the bottom of the screen
  - Select the type of search to perform. This may be select by using the pull down "Search Customer by" or by clicking on the appropriate column. Available search fields are listed below:
    - *Name*
    - *Address 1*
    - *Account*
    - *Meter*

- *Map Location*
- *Phone*
  - Type the customer's information into the "for customer information begin with:" field based on the selection criteria. As the user types the data, an incremental search is performed based upon the information entered until the correct customer is located. A flashing telephone symbol will be displayed on the Calls Map where the member is located.
  - Press the ENTER key on your keyboard, or Double-click on the grid
  - Once the customer selected is entered, Calls Manager will move the call from the New Call Tab to the Calls Pending Tab
  - Enter any needed information in the CIS Comments field for the member. Examples are cell phone number of caller if not listed, where and what the issue is, etc.

- **Calls Pending Tab** ask the caller for information in the checklist, and select all that apply
  - Power is Off is already selected from the checklist by default. Any information needed by operators or the crew should be typed in the remarks box
  - If the customer is part of a known outage, the light bulb icon will be off, and outage information will be displayed. At this time you can provide the caller with information from the Outage Data Tab on this screen
  - If the caller requests a call back, select the Call Back Requested Checkbox and enter the telephone number (if different than shown)
  - Use the **Alt R** command, or click the CIS Remarks button to enter information that will be helpful in the restoration of power or if there are changes needed in the customer file, i.e. Phone number needs correction or gate codes to enter property

- Additional information is available on the member by selecting the Billing Data, Outage Data, Calling History or Outage History tabs from this screen
- Click the Post button when you have finished
- The posted outage call will appear in the Calls Open tab and will be entered into the Outage Management System as an outage.
- If the call is not an outage, meaning a **Service Call** for a line down or pole leaning, etc it would usually be posted as a service call and appear in the Review Calls tab in the Outage Management System. Using this method does not alarm in system operations nor does it show in the outage screen. It appears in Review Calls. Therefore, operators prefer that the service calls are entered as an outage and the Remarks can be viewed to determine the issue.
- If the call cannot be associated with a member, it would be posted as a **Location Call** with detailed notes on the nature of the service call. It would appear in the Review Calls tab. Email operators to let them know you have entered a location call.

How to View and/or Modify a Call
- **Calls Open Tab** – Select this tab to open the following screen from which you will View calls, Edit calls and *Resolve Unknown Consumer* calls using the available filters described below
    - To view or modify a call, simply double click the call line to open the existing call. Make necessary changes and click Post.

- Limit Calls Displayed to: allows user to choose only the types of calls that you want to see
  - *Call Type* will filter calls by the selected type of call: Manual, Verified, IVR, Sensor, SCADA, or AMR
  - *Status* will filter calls by call type: Call Backs, Priority customers, Unresolved Calls, you may also Exclude Unresolved Calls or Non Outage Calls
  - *Call Operators* filters calls by the operator who entered the call
  - *Outages* filters calls by the outage they are associated with
- Search Call by: allows the user to select the field they want to use to locate the customer they want to view or modify, you may also double click on the column you want to use for the search
- Call Information lists pertinent information associated with the call
- Customer and Outage Information provides data from billing as well as the outage the customer is associated with
- Message – When pressed will play the message that the customer has recorded
- Modify – When pressed, the customer's ticket will appear on the Calls Pending tab, allowing you to make changes and/or resolve the call
  - Operators may use modify when a call is stuck in calls manager by unchecking Power is Off and post the call again.

Note: Anytime there is a Button, Tab or control selection that has a letter underlined, i.e. Lookup. You can press and hold the **Alt key** down while typing the letter that is underlined (**L**), this will perform the same operation as moving the mouse button and clicking on that item. The user will save time when trying to resolve the Unknown Consumer calls if this method is practiced.

- **Resolving the Unknown Consumer** from the *Calls Pending Tab* after the user has pressed the Modify Button.
  - Use the **Alt L** command or press the Lookup Button, the following *Customer Lookup* screen will be displayed and if the caller left a message the Message Box will open and begin playing the message

Customer Lookup – 0000000184 Unknown Consumer

Search Customer by : ○ beginning with ○ containing

Name ▾ | 10XXX RANCH CO

Name	Map Location	Account	Phone	Service Address
10XXX RANCH CO	**3139912186001**	**110043018**	**2547972018**	**HOUSE - PERM URD**
10XXX RANCH CO	3139917531001	110043002	2547972018	COUNTY RD 2700 KOPPER
10XXX RANCH CO	3139912189001	110043003	2547972018	
10XXX RANCH CO	3139617938001	110043004	2547972018	
10XXX RANCH CO	3139710866001	110043005	2547972018	4278 COUNTY RD 2700 KOPF
10XXX RANCH CO	3139917136001	110043008	2547972018	BARN
10XXX RANCH CO	3139819156001	110043014	2547972018	
10XXX RANCH CO	3139819258001	110043015	2547972018	
10XXX RANCH CO	3139913800001	110043016	2547972018	
10XXX RANCH CO	3139710859001	110043001	2547972018	4278 COUNTY RD 2700,KOPF
10XXX RANCH CO	3139616708001	110043019	2547972018	
10XXX RANCH CO	3138805721001	110043020	2547972018	
10XXX RANCH CO	3139614700001	110043022	2547972018	FM 56 KOPPERL

🔲 Delete Call 🔲 Message ✓ OK ✗ Cancel

0000000184 Unknown Consumer

Message	Listened By	Listened On
▶ 10/17/2003 18:57:24	tim	11/14/2003 10:22:36

▷ PLAY ■ STOP ○ RECORD ✗ DEL ● CLOSE

- When you have enough information from listening to the message to locate the customer in the Customer Lookup Screen, i.e. name, account#, address, meter#, press the Esc button on your keyboard and the Message will stop and the Message Box will close, allowing you to do the lookup from the Customer Lookup dialog box
  - If you have closed the Message Box and you need to listen again, just press **Alt M**, or press the Message button to start the message again
  - You may replay, stop, rewind and close the message from the Message dialog box as many times as you wish to acquire information necessary to resolve the call
  - If there is not enough information on the message, or if the caller did not leave a message, call the customer using the phone number listed in the *Call Information*
    - If you cannot contact the consumer by phone, or if there is not a phone number in the Call Information, **only then** may you delete the call. Delete the call using the **Alt D** command or by pressing the Delete Call Button and the following Confirm dialog box will open, from which you will select Yes to delete the call or No to cancel the delete option
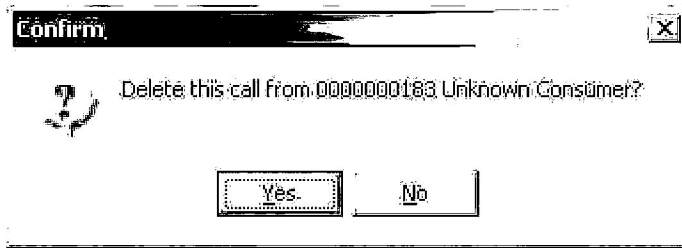
- When you have located the customer in the Customer Lookup dialog box, press the Enter key on the keyboard or press the OK Button on the dialog box. This will open the Calls Pending Tab with the name that you selected from the Customer Lookup dialog box.
  - A remark with the following information will be placed in the Remarks Section: the number of the Unknown Consumer and the customer's name that you selected from the Customer Lookup dialog box and the name of the user that resolved the call
  - *Remarks* – If the consumer left any important information that system operations would be required to review, use the **Alt R** command or press the Remarks Button and type it in this area.
    - Check the *Review by Dispatcher (Alerts Dispatcher)* check box if you determine that the operator must review this call
  - *Post* – Select and press this button to post this information for the call, the system will then log this call in the Outage Management System
- Cancel – If this is not the correct account, press the Cancel Button and begin the process again

Note: When multiple users try to modify the same call record undesirable results are produced. It is recommended to procedurally eliminate the possibility of this situation to occur.

Definitions of the colors used in Calls Manager
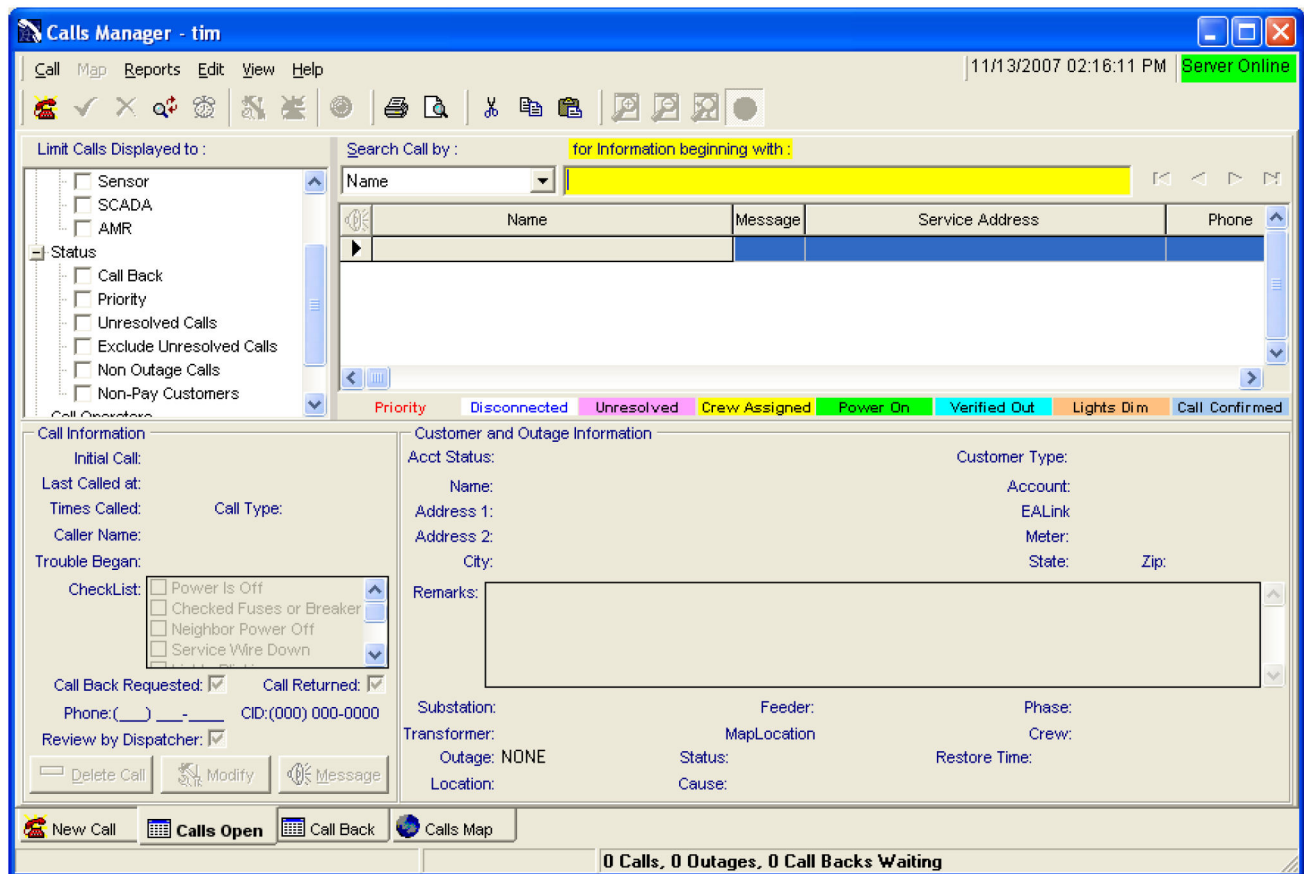
- ▪ Calls Manager now color codes the call grid as the above screen depicts
  - ▪ If there is no fill color, the call is still awaiting the dispatch of a crew to the outage
  - ▪ If there is no fill color, but the font is red the call is a **Priority** or **Key Account** caller
  - ▪ If there is no fill color, but the font is blue the call is a **Disconnected** caller
  - ▪ If the fill color is magenta, the call is an Unresolved call and must be resolved before the outage is recorded in the OMS system
  - ▪ If the fill color is Yellow, he outage has a Crew Assigned to it
  - ▪ If the fill color is Green, the crew has the Power On for this outage
  - ▪ If the fill color is Cyan, the call has been Verified Out by the crew
  - ▪ If the fill color is Orange, it is a service call for Lights Dim.
  - ▪ If the fill color is Light Blue, it is a service call and has been confirmed with the caller.

Operation of Reports

The following general procedures should be followed when using the Reports Software provided with the DisSPatch software. Some reports needed can be found in the DisSPatch OMS Outage History. This will also provide the user with a brief overview of the use of the tools available with the software.

Data Fields – The following data fields are used for the selection and creation of the desired outage reports
- **Select Report** – Allows the user to select from a list of reports, including but not limited to
  - Switching
  - Outage Report by Cause, Date, Effect, Feeder or Substation
- **Report Title** – Allows the user to Edit the Report Title to their specific needs
- **Starting Date** – Allows the user to set the start date for the reports they wish to view
- **Ending Date** – Allows the user to set the ending date for the reports the wish to view
- **Parameters** – This field allows the user to enter detail information required for some reports

Tabs and Buttons Used from the Reports Software
- **Data Tab** – Allows the user to view the tabular data that is represented in the printed report format
- **Preview** – Allows the user to preview the selected report before printing
  - Once the user has selected the preview button and the report is displayed you may print the report by clicking the Print Button
- **PDF** – Allows the user to save the file in .PDF format for other departmental uses
- **HTML** – Allows the user to save the file in .HTML format for other departmental uses
- **Export** – Allows the user to export the file into an Excel spreadsheet in the .XLS format.

Standard UCS Outage Reports
- **Calls Received** – Allows the user to view calls received during a specified time period using the "Starting Date" and "Ending Date"
- **Device Out Multiple Times** – Allows the user to view devices that have been out multiple times during a specified time period using the "Starting Date" and "Ending Date"
- **Individual Account Outage History** – Allows the user to view outages on a defined account by entering the account number and a specified time period using the "Starting Date" and "Ending Date"
- **Outages Report UCS**– Allows the user to view outages by substation during a specified time period using the "Starting Date" and "Ending Date".
- **Outage Report Summary UCS** – Allows the user to view outages for all feeders and provides the calculated ASAI, CAIDI, SAIDI AND SAIFI values during a specified time period using the "Starting Date" and "Ending Date"
- **Outage Category UCS** – Allows the user to view a summary of the outages by the Cause Description entered for the outage during a specified time period using the "Starting Date" and "Ending Date"
- **Outage Cause Report UCS**– Allows the user to view outages by a defined cause description during a specified time period using the "Starting Date" and "Ending Date"
- **Outage Report by Cause UCS**– Allows the user to view a detailed report of "Effects" for all outages during a specified time period using the "Starting Date" and "Ending Date"
- **Outage by Effect** – Allows the user to view a detailed report of "Causes" for all outages during a specified time period using the "Starting Date" and "Ending Date"
- **Outage Report by Feeder** – Allows the user to view outages for any effected Feeders during a specified time period using the "Starting Date" and "Ending Date"
- **Switching Report** – This report provides the switching sequence of events when there is any load transfer or switching procedure that is used to restore customers during an outage. The user must provide the outage name (OutageRecId) to generate the report.

The **DisSPatch Outage Manager** also has reporting means to find other information.

Priority Customers tab – Provides the status of all priority accounts that are experiencing an active outage at that particular time and provides the following information:
- **Outage Name** – The outage ID used for dispatching

- **Outage Start Time** – The time the first call was logged for this outage
- **Action** – Provides the user with one of two statuses of the outage
    - UCS Crew Working on Outage
    - Awaiting Dispatch of UCS Crew
- **Verified Cause** – Informs the user of the status of the outage
    - Needs Verification – Awaiting information from the UCS crew
    - Verifies what Device is Open – Informing user of the cause of the outage
- **Consumers Affected** – Informs the user of the predicted number of consumers that are affected by this outage
- **Crew Assigned** – Provides the name of the UCS crew assigned to the outage
- **Other Information Provided**
    - Customer Name
    - Customer Phone #
    - Customer Map Location
    - Customer Account #
    - Under the Outage History tab you can search for outages using certain criteria with start and end dates.
        - This tab will also allow you to preview, discard, edit the cause codes, or modify outage times as needed.

Using/Operating the Radio System

The UCS Radio system is a Motorola VHF Digital TRBONET System with five repeater locations, one TRBONET server (in Burleson) with 6 dispatch console locations running on desktop computers (4 in Burleson, 2 in Cleburne), one WAVE server (in Burleson) 6 Mobile radio locations for WAVE (2 radios at each major office locations), approximately 20 portables and 100 mobile radios. Relating to UCS Outage Management Guidelines, there are really two items that need to be discussed: the TRBONET server and console software, and the WAVE server with corresponding Mobile radios.

<u>Consoles</u>:

The TRBONET console software is the main way for an operator to communicate with a crew. As a conversation comes from one of these four consoles, the unit ID is shown on the mobile and portable radios. The consoles are software-based and work by communicating with the TRBONET server. As long as the server is up and the console PCs are connected to it the TRBONET system will work.

The server software monitors the connection to each repeater location, and will notify the operator via the console software if there is a connection problem. In the console software, there are 5 repeaters available each with two channels for a total of 10 channels. operators use the OPS channels (on the Radio Interface tab), and do not monitor the Field Reps channels. The repeater locations are: Grandview, Granbury, Stephenville, Meridian and Miller Mountain.

With respect to console operations there is no hardware specific to the system; so any PC or Windows problem can be worked around by using a different computer. The connections to the server are hard-wired, so the Ethernet cable that plugs into each console PC must be used to connect to the server. The microphone picks up any noise when the PTT button is pressed and held. The audio output of radio traffic is controlled by the Windows sound settings. Selected channels will output at full volume while unselected channels may be muted or set to output at a lower volume. When the foot pedal is pressed, the microphone will transmit to all selected channels.

Finally, the software must be used for the console to operate correctly. To select a channel, you simply click the check box in the desired channel box. When you use the PTT button, it will key all selected channels. Anytime a conversation occurs on a channel, there will be a time stamp as well as the ID that initiated the conversation in the History panel. Recordings can be accessed and replayed from the History panel. The word channel is interchangeable with the word repeater for the purposes of this discussion; it is understood that operators will only be using the OPS channels. If a software problem is evident, the program can be closed down and restarted on the PC. Simply close the program down by click the X in the upper right hand corner or

by using the function off the file menu. To start it back up, double-click the TRBONET Dispatch 5.2 Icon on the desktop of the PC. If a PC has to be completely shut down and restarted, the Network Administrators will have the passwords available for the restart.

The last function of the software is Patch. This is enabled by selecting/dragging each channel that will be Patched together into the 'Cross Patch' window at the top right of the radio screen. When a Patch is in place, all repeaters in the patch are like one repeater. All conversations on any patched repeater are heard by all repeaters in the patch.

Mobile Wave Radios:

The WAVE system is a backup to the dispatch consoles and acts as the primary mode of communications from member service representatives at the six major offices (Cleburne – 482 & 485, Burleson – 580, Granbury – 680, Stephenville – 181). Each of the WAVE Mobile radios is programmed specifically for the office it resides and the channel it transmits and receives on. The WAVE system works by sending the digital audio signal over the network to the WAVE server, which routes it to the proper mobile radio. The mobile radio transmits just like a mobile radio in a truck: it hits the repeater tower, which then transmits the signal over the range of that repeater. The Mobile WAVE radios are located in the MW tower buildings at Burleson, Cleburne, Granbury and Stephenville; and on the MSR desks at Meridian and PK Lake. This allows local control of the radio in cases where the consoles are not available due to line or microwave problems.

Using/Operating the SCADA/DA System

UCS SCADA/Survalent

Guidelines

February 2019

Table of Contents

SmartVu is the name of the software United will be using to access the SCADA network.

- SmartVu is the application and is run from a standard pc.
- SmartVu looks and responds very similar to any of the Microsoft office programs.

The first operation of business is to login to the SCADA network.

- Each operator will be required to log on to SmartVu with their username and password
- During shift changes
    - SmartVu will be open and setup correctly on both SCADA machines.
    - The operator beginning their shift will need to login to the SmartVu window. A previously saved configuration will open all screens how they should be.
- Access the login screen from the Login at the center top of the screen.
- The login screen will look like this.
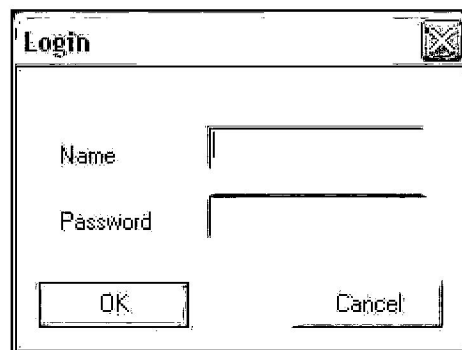
- Usernames and Passwords
    - You will need to change your password once you have logged in for the first time. New passwords will need to be at least 5 characters in length and include one number.
    - All United rules and policies concerning passwords apply on the SCADA network as well.
    - You are responsible for manually changing your SCADA password at the same time your password expires on the UCS network.

- o Each person will be responsible for being logged in during their shift.
- Refer to operator notes for username and password if either of the SCADA PCs needs to be rebooted and or logged into.
- In the case of SmartVu not being open.
  - o Double click the SmartVu icon from the desktop.

  - o Survalent will open with the UCS screen as the default. This window will remain on the left hand monitor.
    - Operator will need to login.
    - All computers have been changed to save the configuration to eliminate the need to reopen the Operator Summary and Alarm Screens.

- Above is the expected outcome for the Alarm View and Operator summary window.

- Below is the layout to be used for SCADA machines during operation once SmartVu has been opened.

System Overview/ UCS screen

- This window is replacing the UCS and UCS2 displays. This will be referred to as the UCS screen.
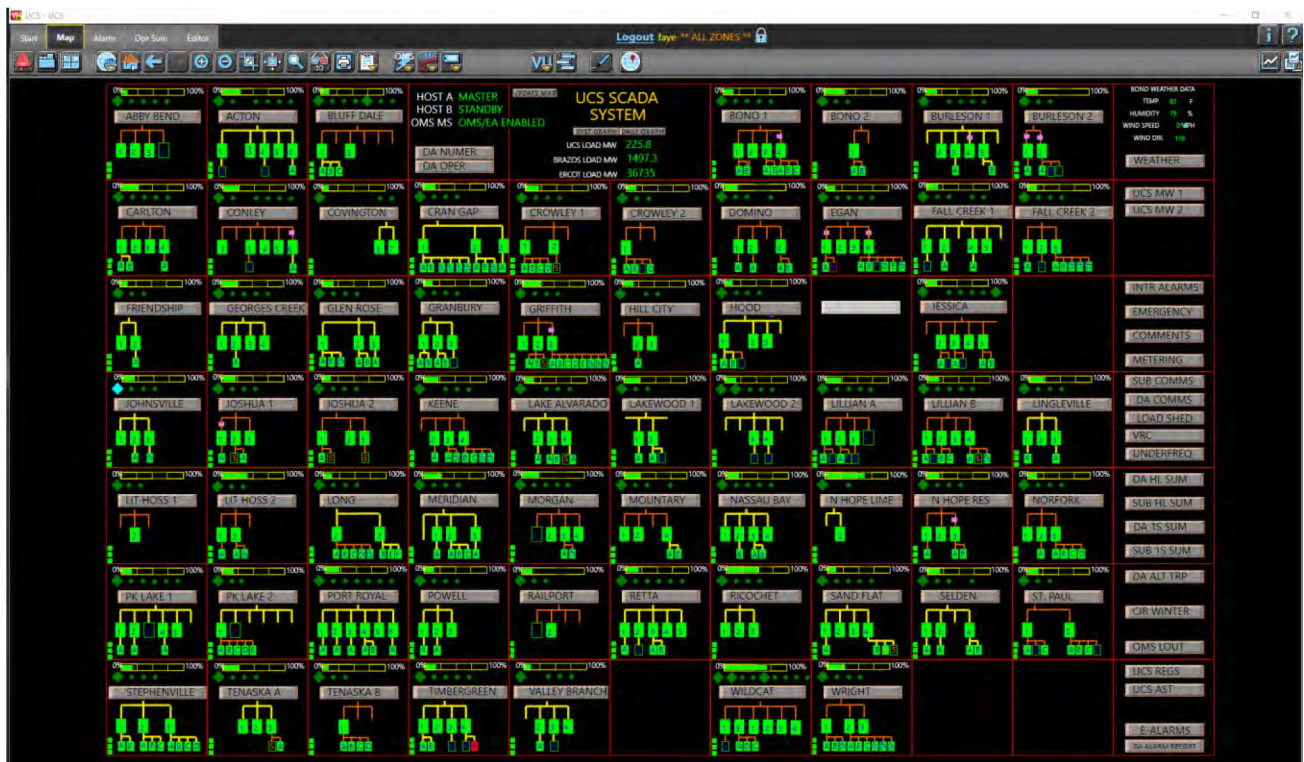
- One major change to note. The recloser status colors have been swapped.
  - Unacknowledged feeder open – blinking box outlined in red.
  - Acknowledged feeder open – box outlined in red.
  - Unacknowledged feeder closed – blinking solid green box.
  - Acknowledged feeder closed – solid green box.
- Operator will be responsible to ensure the Audible Alarm is enabled at all times. It is in the best interest of the Operator to NEVER disable the audible alarm. Audible alarm silence 🔔 is the proper way to 'shut it up'. The image below represents Audible Alarm Enabled.
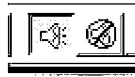
- All recloser symbols on the overview screen are actual recloser status points. Meaning the recloser status can be changed from this screen.
- You can return to the UCS view at any point by completing the following:
  - Press 'Home' button on the keyboard.
  - From the Navigate pull-down menu select default view.
  - Select the house icon from the toolbar

- Silencing an alarm
  - From the Alarm pull-down select alarm silence
  - Select the alarm icon from the toolbar

- Acknowledging and alarm
  - Right click on the analog or status point in alarm and select 'alarm acknowledge'.
  - Operators will acknowledge all alarms as they come in regardless of the type of alarm.
  - There are other procedures that can be used to acknowledge alarms in the Alarm View section of this documentation
- Printing hard copies
  - SmartVu will print what is on the screen. Ensure the correct view is displayed before the print process is started.
  - From the file pull-down menu select print to access the print dialog box. The system operations printer should be the default printer, if not select it from the pull down list and select ok.
  - Access the print dialog box from the printer icon on the toolbar.

- Located at the top center of the overview screen are the analog values for United's and Brazos's current load in megawatts.
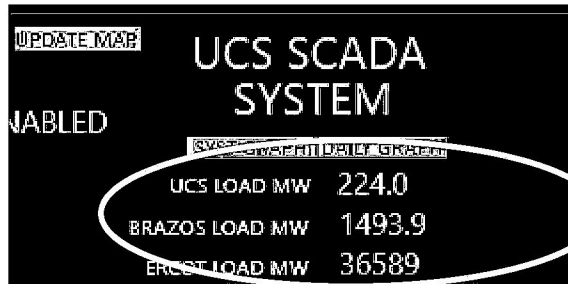
- The majority of the overview screen consists of a matrix containing all of United's substations.
  - o Located at the bottom left hand corner of each substation box are the substation voltage analog values. These points will take the place of the VOLT1 and VOLT2 screens. The boxes will change colors in the same manner as before. When the cursor is placed on the box it will display the substation, phase and voltage value.
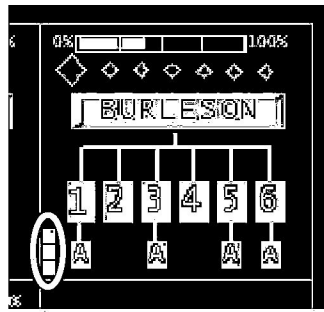
- o Located at the top of each substation box is an analog bar graph representing the percent of load the transformer is currently experiencing? This graph will change to yellow when load is greater than 85% and to red when load is greater than 100%.
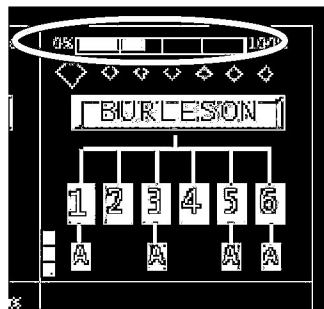
- o Located below the transformer load graph are alarm indicators. The larger diamond represents the station while the smaller diamonds represent the feeders. If there

are any alarms present for the station or the feeders it will be reflected in the alarm indicators.
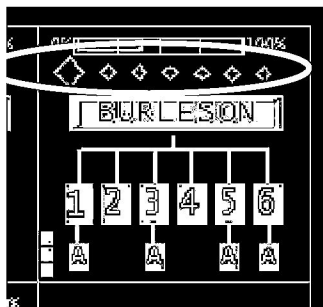
o Below the alarm indicators is the substation pick point, which will take you to the selected substation view.
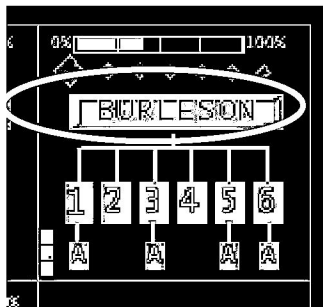
o Below the substation pick point are the substation feeders and down line electronic devices. These will show the current device status.
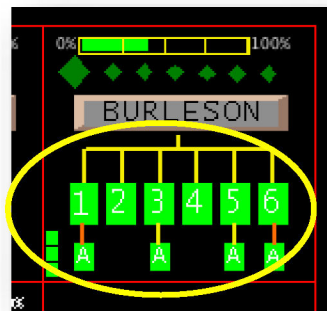
- Located at the bottom and bottom-right hand corner of the UCS screen are pick points to get operators to summaries and screens normally found on the UCS2 screen.
  - DA Hot Line summary
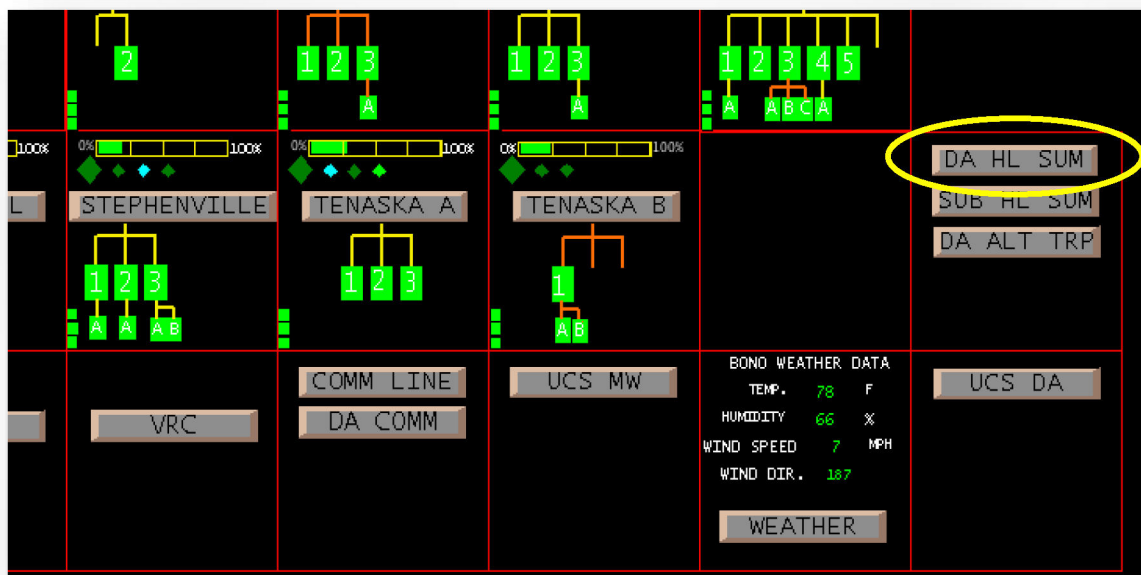
o   Sub OCR Hot Line summary
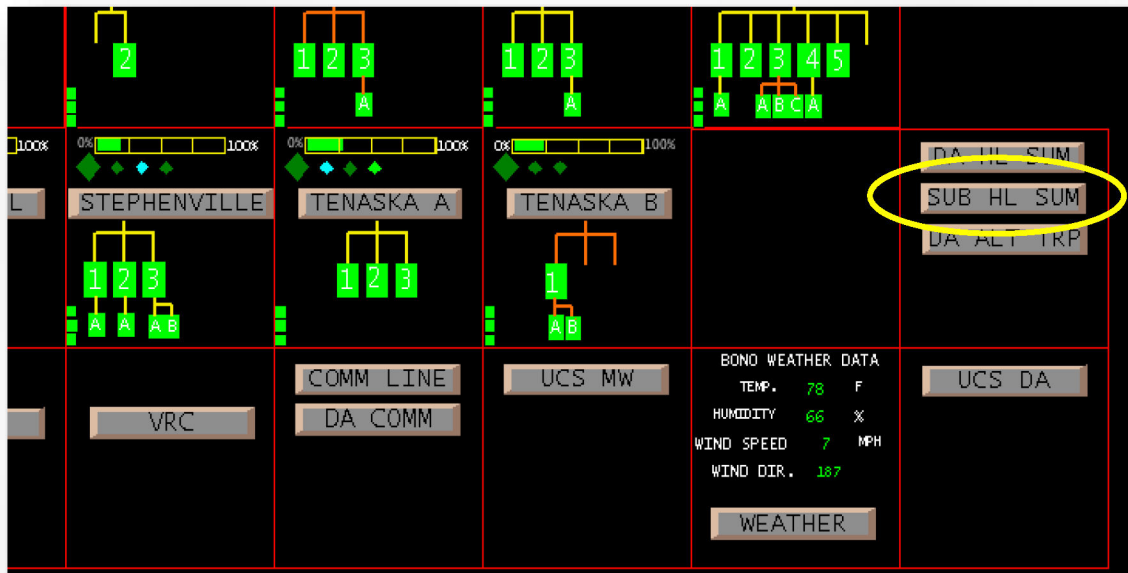
o   DA alt trip settings
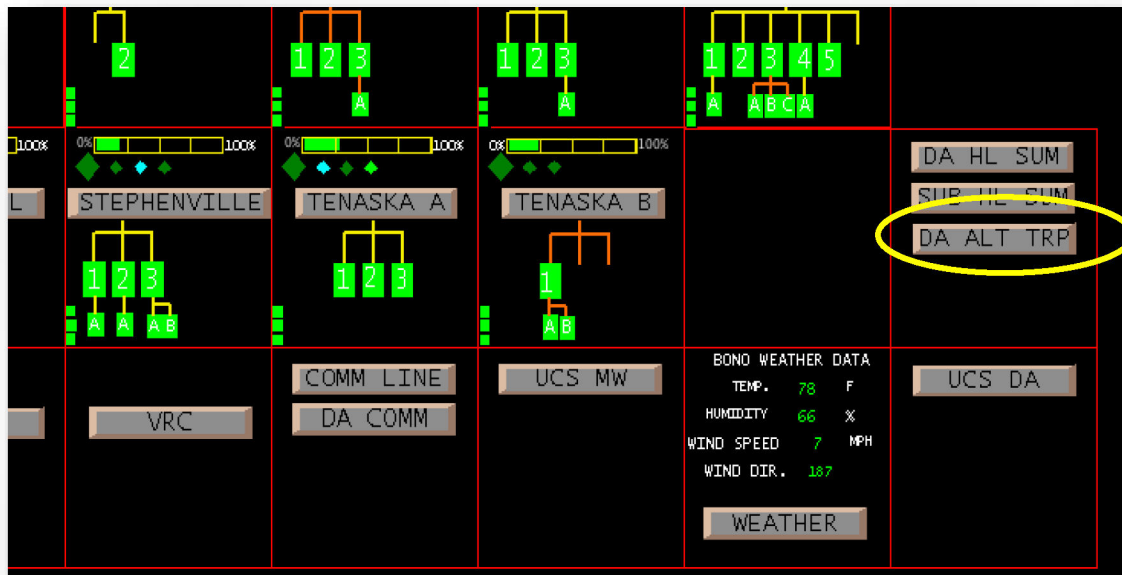
- o Voltage reduction screen
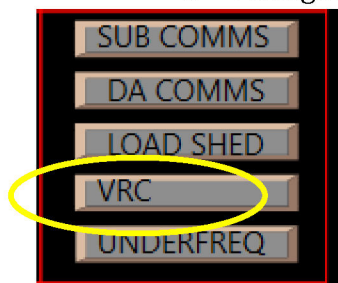
- o COMMLN display. Station communication lines. (Substation Comm Lines)
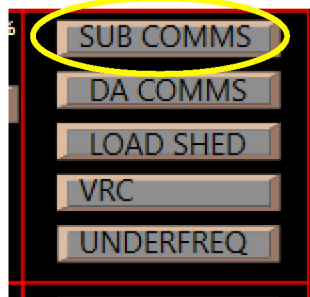
o   DCOM03 display. Down line communication lines. (UCS Device COMM Lines)
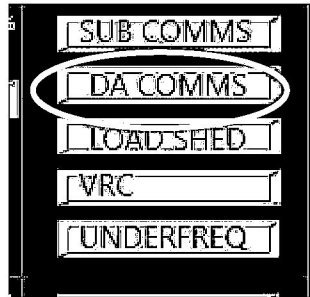
o   Megawatt and Power factor. (MW & PF west –east)
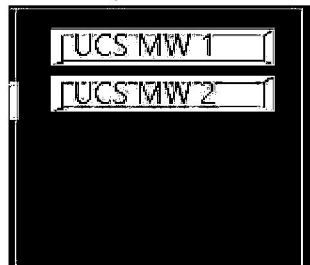
- Weather. UCS screen displays data from the Bono weather station. Selecting the Weather pick point will take you to the weather page that includes more data as well as weather data from the IBM substation.
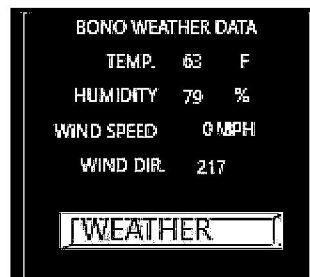
- DA Number is a summary that allows you to select DA reclosers by RTU number.
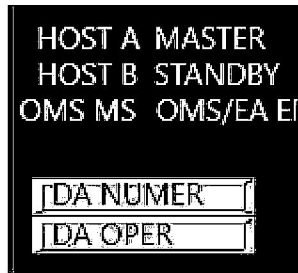
- DA Oper is an easy way to get to a DA list by the operations area

- Status Bar is located at the bottom of the map display and shows
  - The IP address of the host to which SmartVu is currently connected.
  - Master station time.
- The Load Shed pick point takes you to a screen that was designed to make the open/close and report processes easier.
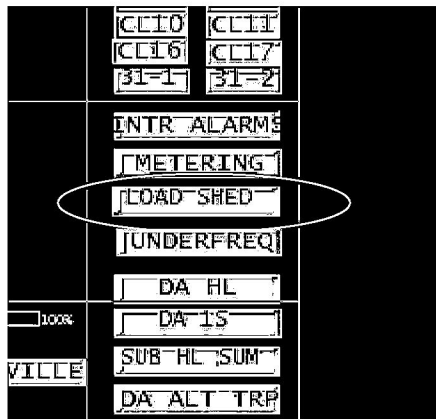
  - This screen consists of all tiers and reporting tools needed if ERCOT mandates load shed.
  - Brazos operators would call with warnings prior to the actual request to begin load shed.
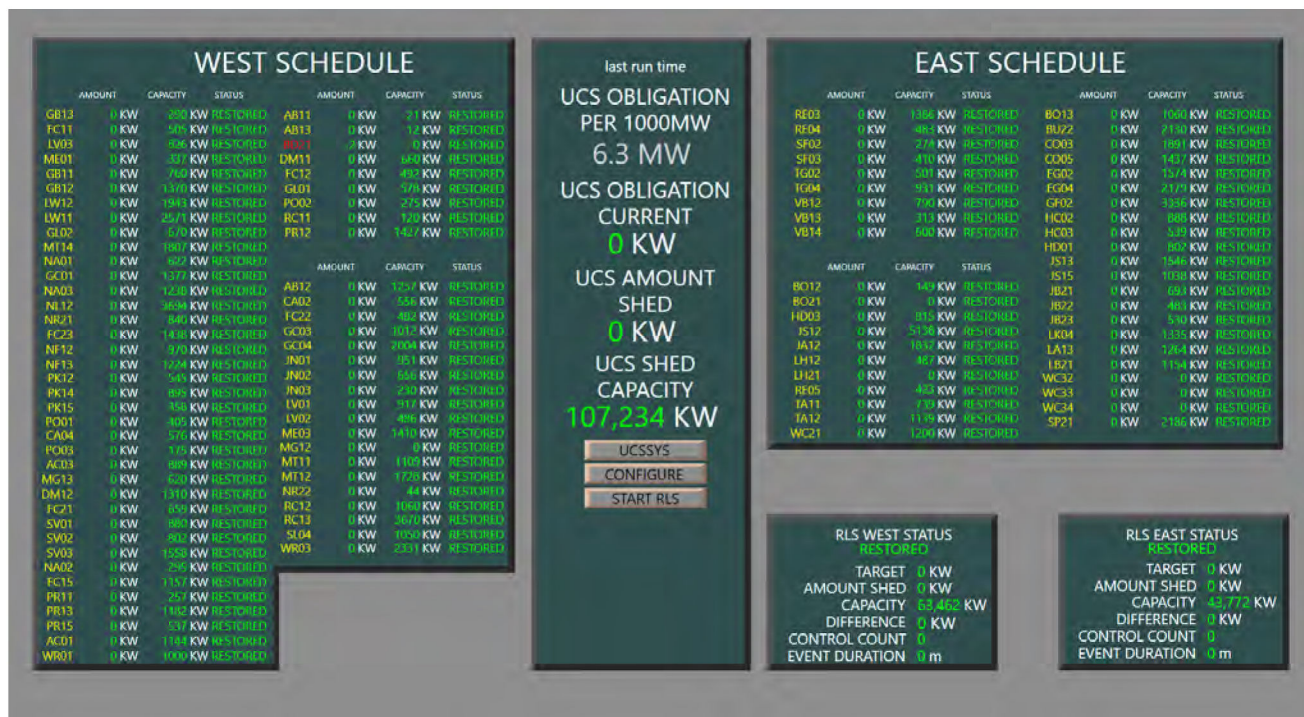
- o Operators and Sr Foreman would first Set the Beginning Window for the reporting to start from 0:00.
- o The Load Shed Reporting will be turned ON. Wait 3 minutes before shedding.
- o Once given the request from Brazos, the Sr Foreman and operators will calculate the load needed and open/close the reclosers from this screen.
- o When Brazos calls and ends the need for load shed, all the calculations and times are in the reports.

- An Emergency button has been added to the UCS Summary Screen. It contains the 911 addresses of each substation.
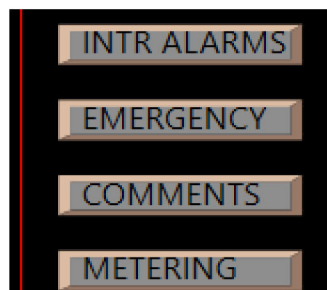
- The OMS Lout button has been added to the UCS Summary Screen. It contains all devices both substation and DA's that have radios that communicate with OMS through multispeak.

  - When an alarm is blocked in SmartVu, the device will not automatically open an outage in OMS. (Ex: Brazos Testing)

  - Operators will block alarms after an outage is open where switching needs to be done for backfeeding. The alarms will be turned off once the outage is restored.

Operator Summary

The operator summary is used to monitor alarms and system events. This summary represents what is being printed.

To navigate through the summary:

Top		The Top button moves the display to the top of the operator summary. (end of list)
Bottom		The Bottom button moves the display to the bottom of the operator summary. (most current)
Page Up		The Page Up button moves the operator summary display up one page.

Page Down	⇓|	The Page Down button moves the operator summary display down one page.

Alarm View

The Alarm View display is used to monitor station and system alarms.

From the Alarm View you can

- While the Alarm View is the active window select the alarm pull-down menu to

⃠	Delete Alarm
🔔	Acknowledge Alarm
🔔	Point Acknowledge Alarm
🔔	Acknowledge Page
🔔	Block Alarm
🔔	Unblock Alarm
▣	Remove Maintenance Flag
🔔	Silence Audible Alarm
🔔	Alarms on this point
🔔	Alarms on this station
▥▥	Operations log on this point
▥▥	Operations log on this station
🔍	Find Point in Map
⚙	Point properties
0.001	Show Milliseconds
🔔	Alarm Options
🔑	Login...
🔑	Logout
	Cancel
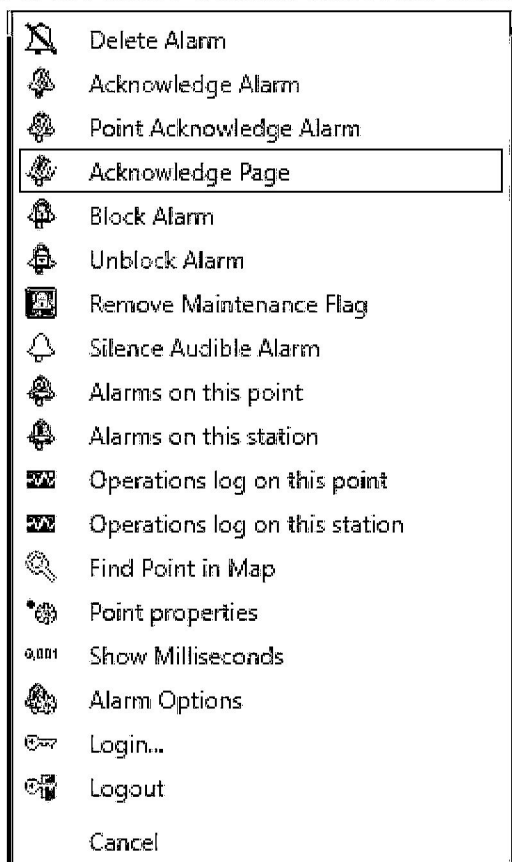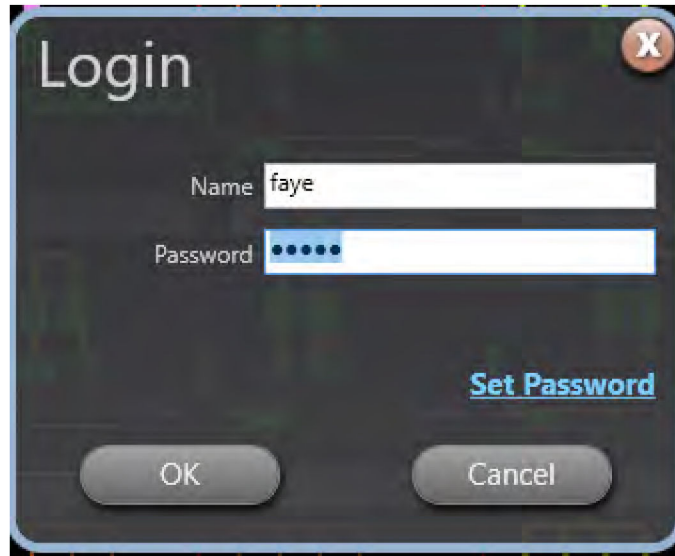
- o Silence the audible alarm. 🔔|
- o Acknowledge single alarm
    - Select the alarm in the list and either right click and select Acknowledge, select ✔ from the toolbar or use the alarm pull down menu to choose Acknowledge.
- o Page acknowledge the alarms.

- Right click in the alarm summary, without an alarm selected, and choose page acknowledge, select ⚡ from the toolbar or use the alarm pull down menu, without an alarm selected, to choose Page Acknowledge.
  - o Operators will acknowledge all alarms as they come in regardless of the type of alarm.
  - o Block, unblock and delete **will not** be used by system operations unless directed.
  - o Navigate to the top ⬆ and bottom ⬇ of the file. The most current data is at the top of the file.

Changing a password

- Access the Change Password screen from the Login at the top-center of the SmartVu screen.

- Login and Select Set Password

- Enter your new password and then confirm it.
- New passwords will need to be at least 5 characters in length and include one number.

Hot Line Tag

- Select the status point then Tag/Untag option. The status point is the on/off status next to the control description.

```
01    CR11A    OFF
02    LB22B    OFF
03    TB21B    OFF
04    TB21A    OFF
05    PR14A    OFF
06    PR13A    OFF
07    BU06A    OFF F
08    VE01B    OFF
```

```
CONTROL : DA02 HOTL                    [X]

            LB22 DA02 HOT LINE

Set Manual ...   OFF       ON      Alarm Ackn

Activate                           Alarm Block

Deactivate                         Tag/Untag ...

              Execute            Cancel
```
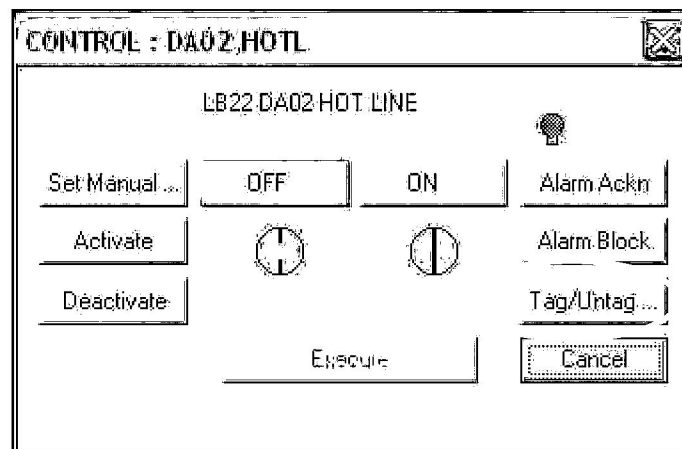
- Adding a tag (This step is to follow putting device in HL or 1S)
  - Select Add from with the Action box.
  - Select Hold Open from within the Type pull down.
  - Enter truck information in Tag# field. If contractor is requesting HL, put abbreviation of company name and 01. (Ex: SO01 for Southern Electric).
  - Enter user initials. If contractor is requesting HL, put contractor contact information (name and phone #) in Description field.
  - Select execute.
  - Select cancel to close Tag/Untag dialog box.

- Removing a tag
  - Select the tag to be removed from within the Tags window.
  - Select remove from within the Action box.
  - Select execute.
  - Select cancel to close Tag/Untag dialog box.

- This procedure is the same for tagging any point in SCADA.

Multiple UCS screens

- The need arises at times to view multiple substations once. This can be done a couple of different ways.
  - Open another instance of Survalent and move it to the right hand monitor.
    - You will now have 2 UCS screens.
    - When finished close the third instance or minimize the window until needed again.
    - Note: Survalent opens with the UCS screen as the default.
  - From the existing Survalent on right hand monitor select the file pull down menu and choose UCS.wmp from the lower portion of the menu.
    - You can then toggle between the screens (UCS, Alarm View and Operator Summary) by selecting push behind on the toolbar. ⊞.
    - You can also change between screens using the tabs located at the bottom the window.
    - Close the UCS.wmp (not Survalent) when finished.
- Return to the standard layout before the next operator logs in for their shift or when you no longer need the extra UCS screen.

Intrusion Alarm Block

- Select the INTR ALARM screen from the overview page.
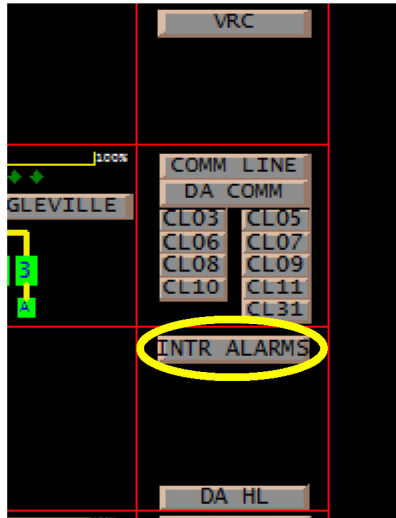
- Below you see the control screen for the Alarm Inhibitor
    - It is set to block the alarms every day starting at 8 a.m. and resume alarms at 5 p.m.
    - This will block system intrusion alarms during business hours only.

Lockout Summary Page

- The Lockout Summary page lists all devices (Sub and DA) that utilize the SCADA-OMS Multi Speak Interface. You can access by selecting the button circled below from the overview screen.
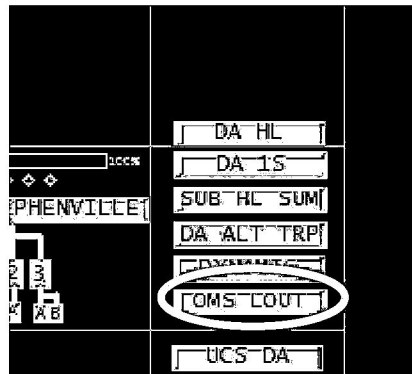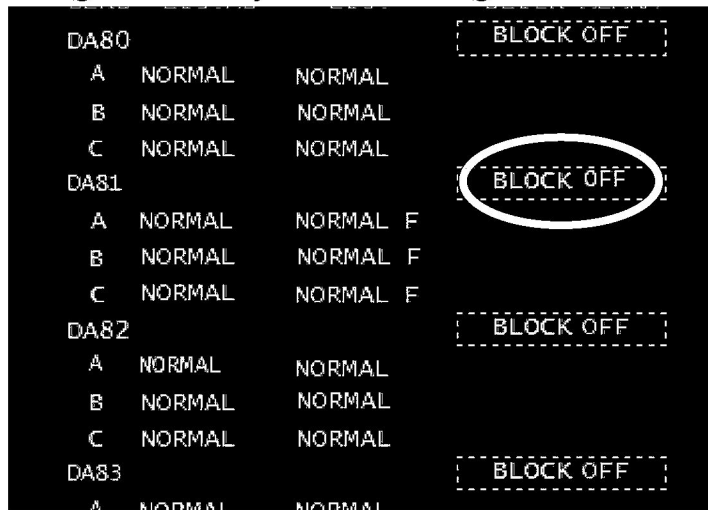
- Below is a screenshot taken from the summary page. There are four columns:
  - Circuit. This shows the sub and circuit or the DA number for the device.
  - LOUTMS – shows the state of the Multi Speak point associatted with that device or device phase
  - LOUT – Shows the lockout state of that device or device phase.
  - Block Alarm – Shows if the Multi Speak messages are being blocked.

SCADA-OMS Multispeak Operations

- SCADA and OMS have the capability of passing recloser status via Multispeak interface. When a recloser (Sub and DA) experiences a lockout, SCADA will send a message to OMS which will automatically verify open the device and create an outage. When the recloser has closed back in, SCADA will then send another message to OMS which will restore the device and outage in OMS.

- When could this be a problem? When recloser testing is occurring or when maintenance is being performed. It is ideal for the operator, once notified testing will begin, to allow one set of open and closes to be sent to OMS to verify the interface is working properly. From that point it might be best to block or turn off the interface. You can block the messages being sent from SCADA to OMS from the Lockout Summary page. Find the device being testing in the summary page and manually set the block to the ON position. THE MOST IMPORTANT THING TO REMEMBER HERE IS TO SET THE BLOCK BACK TO THE OFF POSITION WHEN TESTING HAS COMPLETED. The block point for DA81 is circled below.

- NOTE – All outages created by recloser testing will need to be discarded in OMS.

- Verifying the Multi Speak link is up - Located at the bottom left hand side of page 3 of the UCS Communication Line Summary page you will see the Multi Speak Link status arrow. This should be green and pointing upward.

Adding OutageReports to an Inbox
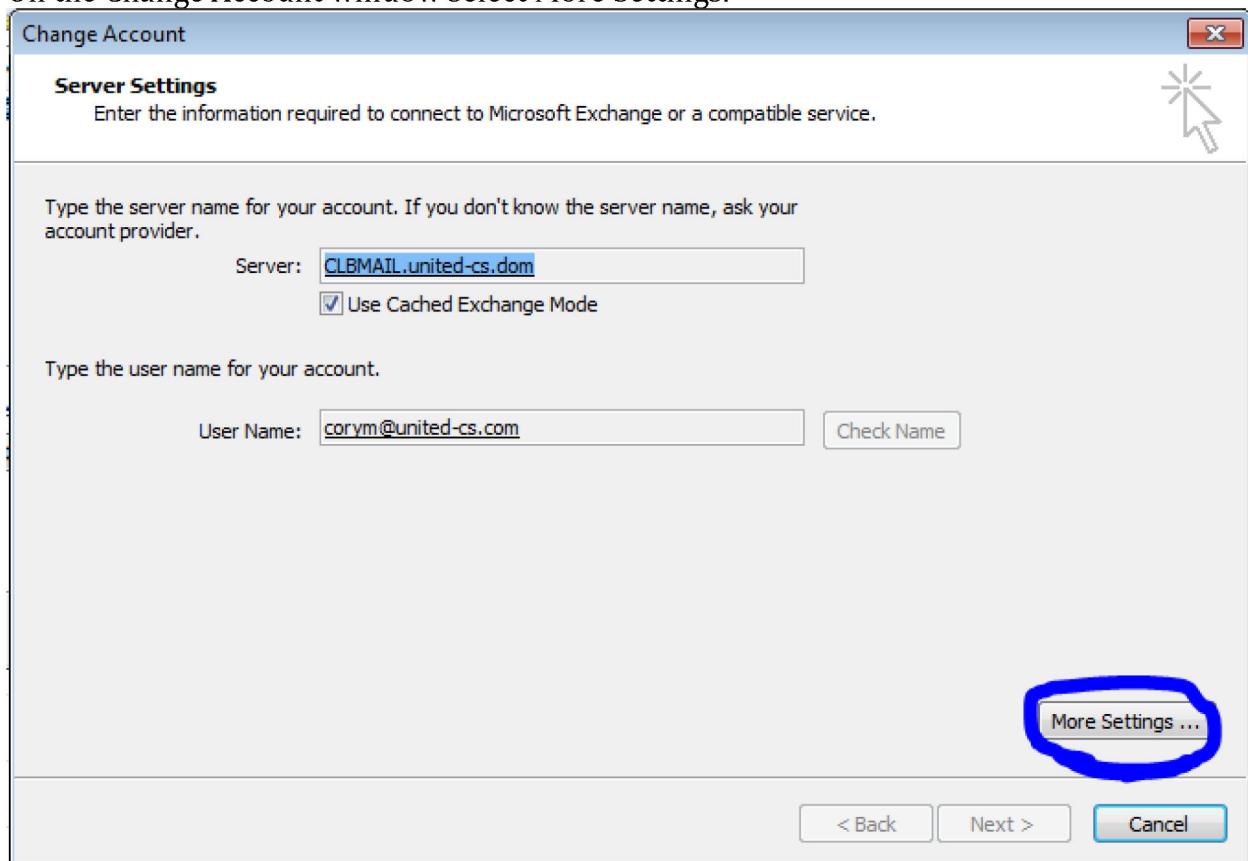
Follow the procedures to add the Outage Reports to your Inbox.
From the File tab select account settings.
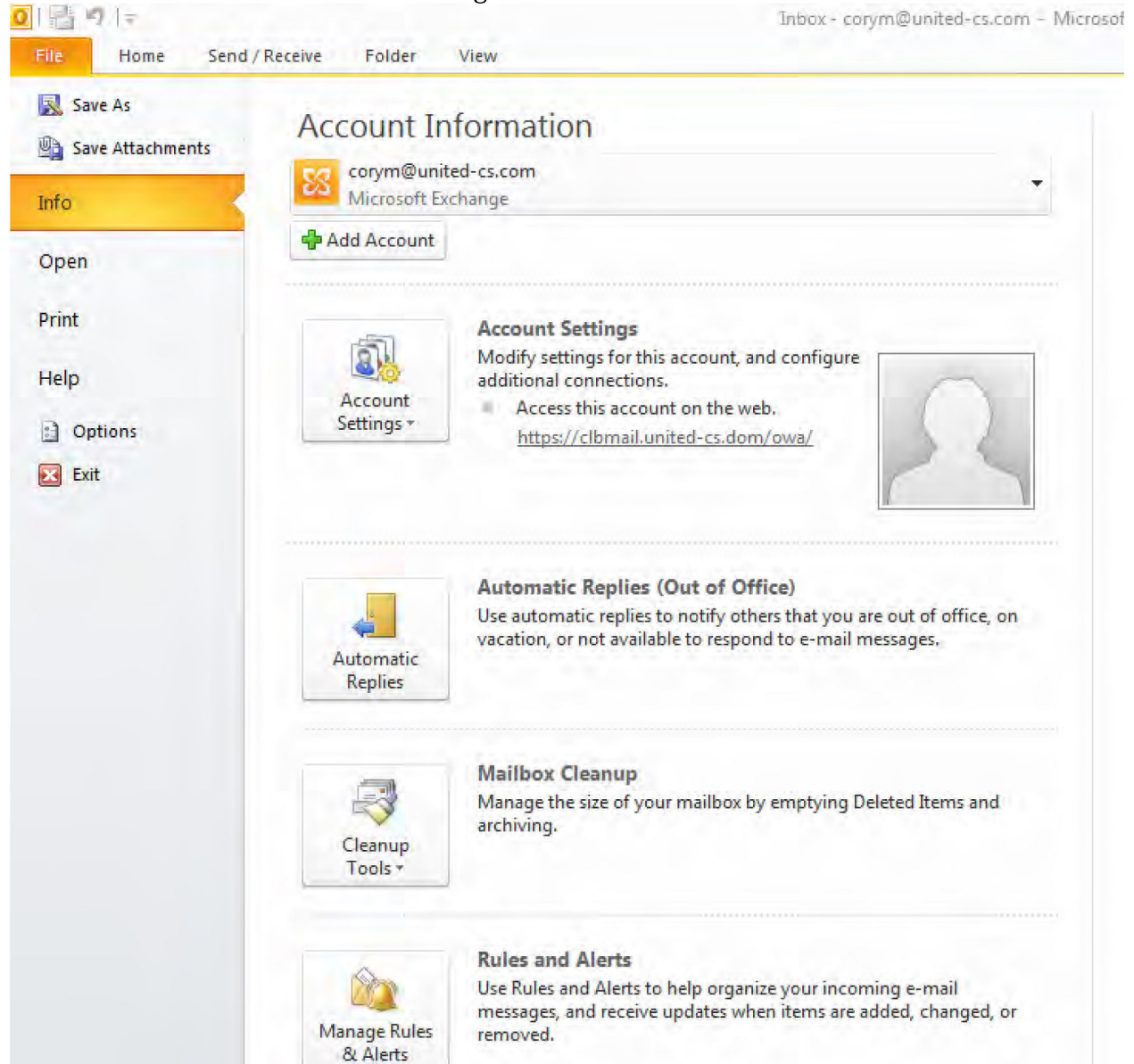
From the account settings select change while your account is highlighted.
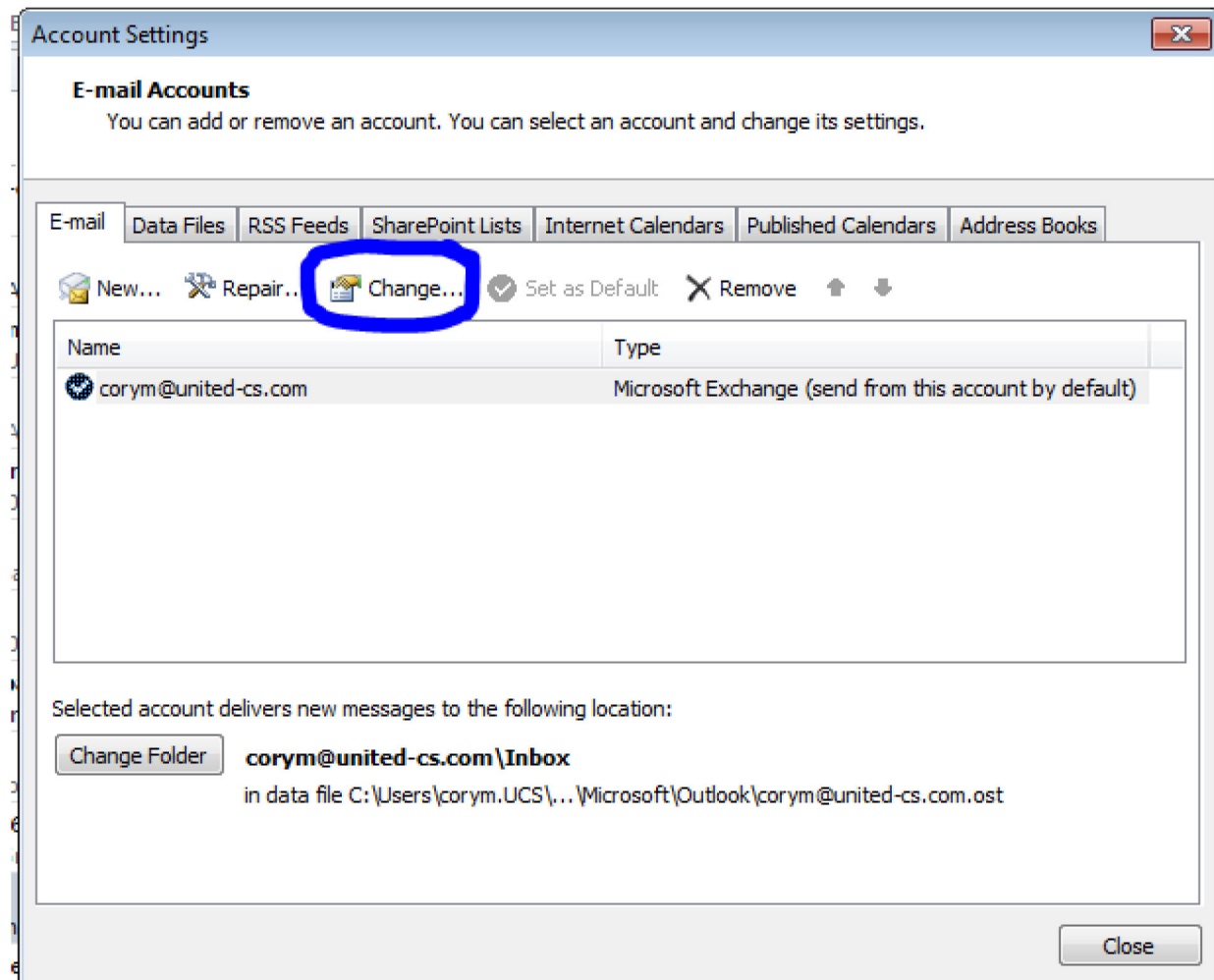
On the Change Account window select More Settings.

On the Advanced tab select to Add...

Microsoft Exchange

| General | Advanced | Security | Connection |

Mailboxes

Open these additional mailboxes:

Add...

Remove

Cached Exchange Mode Settings

☑ Use Cached Exchange Mode
  ☑ Download shared folders
  ☐ Download Public Folder Favorites

Mailbox Mode

Outlook is running in Unicode mode against Microsoft Exchange.

Outlook Data File Settings...

OK   Cancel   Apply
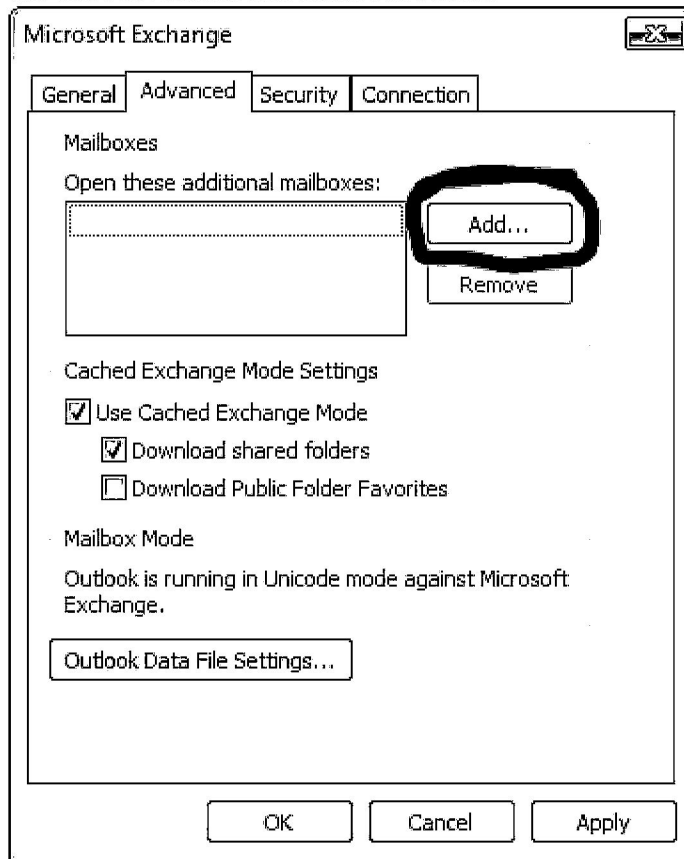
Type "OutageReports" in the Add mailbox window and hit OK.
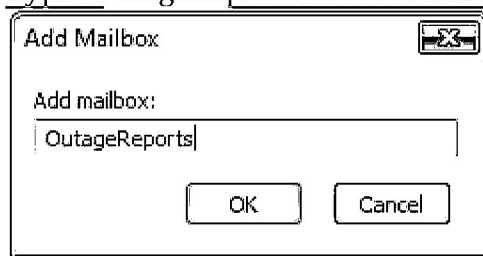
Add Mailbox

Add mailbox:

OutageReports

OK   Cancel

Select Next then OK.
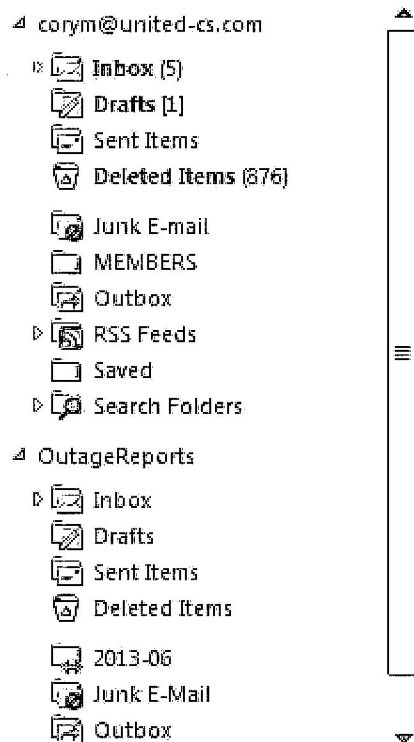
Now select Finish.
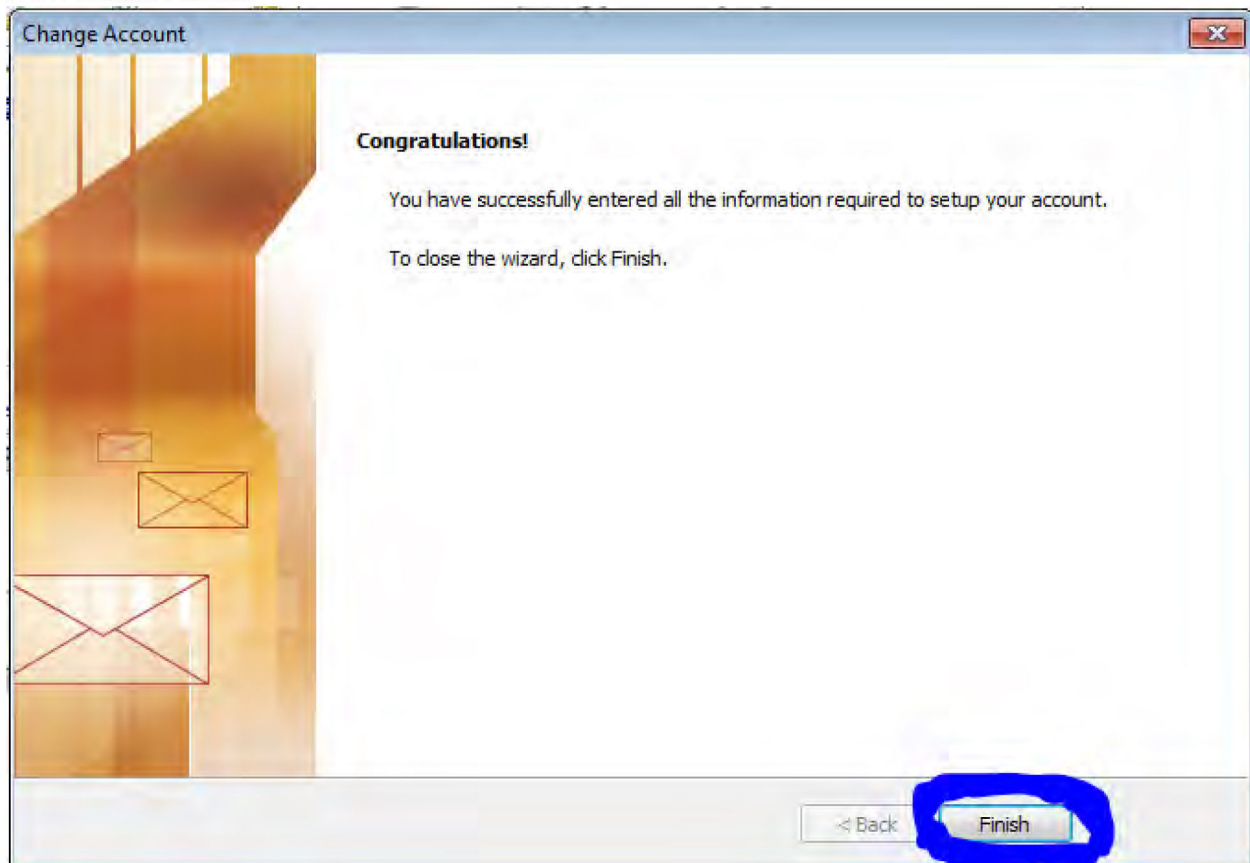
You should now see the Outage Reports inbox in your Outlook window along with your account.

▲ corym@united-cs.com
  ▷ Inbox (5)
    Drafts [1]
    Sent Items
    Deleted Items (876)

    Junk E-mail
    MEMBERS
    Outbox
  ▷ RSS Feeds
    Saved
  ▷ Search Folders

▲ OutageReports
  ▷ Inbox
    Drafts
    Sent Items
    Deleted Items

    2013-06
    Junk E-Mail
    Outbox

Outage reporting via www.United-cs.com

From our website, whether the desktop or mobile version, the membership can select to Report Outage using a standard form.
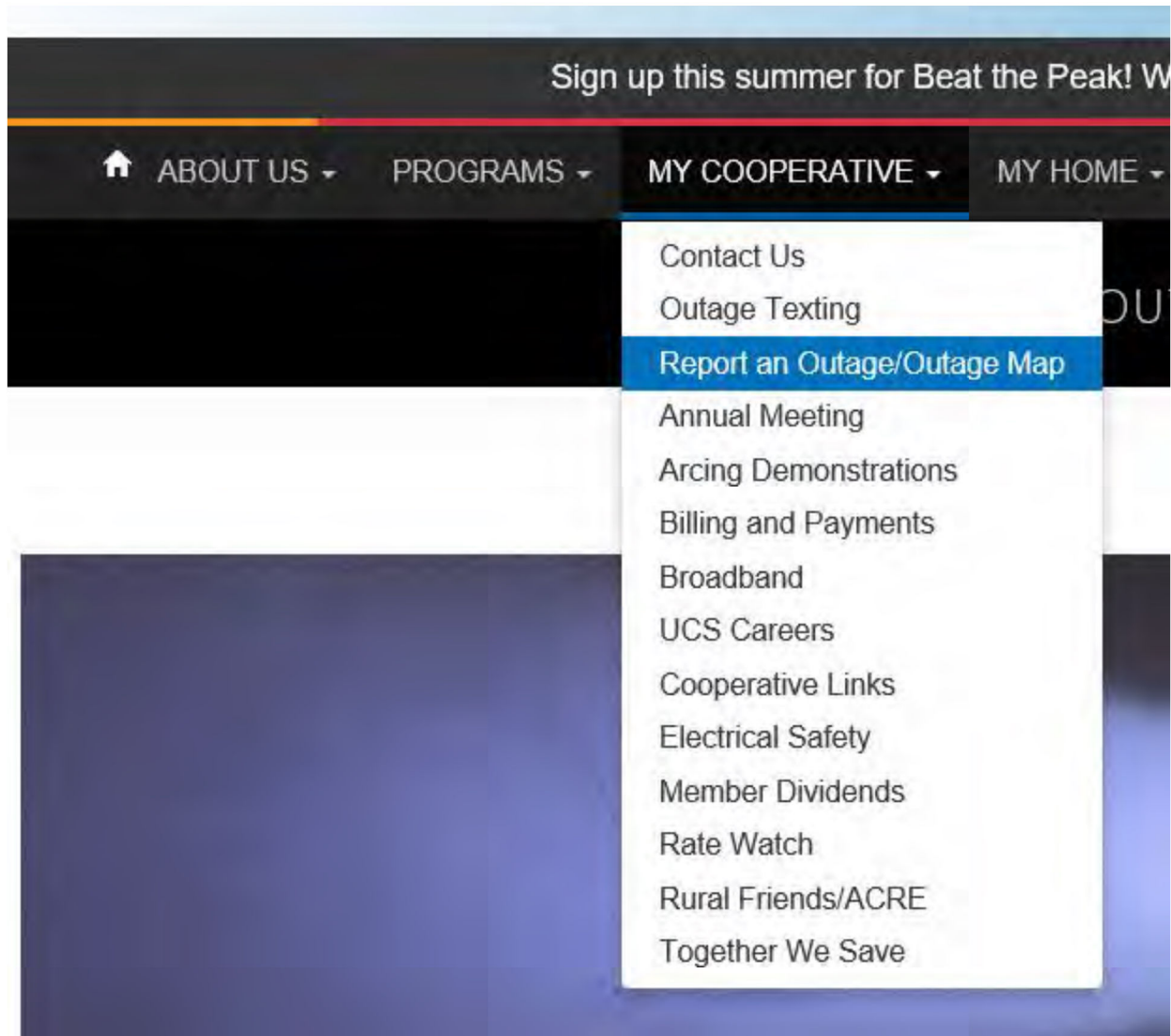
The members will fill out the form and submit.

Report Outages Online

Outage Reporting

Name⋆

Phone⋆

Address⋆

Address 2

City/Town⋆　　　　**State/Province**⋆　　　　**ZIP/Postal Code**⋆

　　　　　　　　　　- Select -　　　　▼

Email⋆

Outage Date and Time⋆

Meter Number

Member Account Number⋆

The form data will be e-mailed to the Outage Reports inbox. All operators and various MSRs will have access to the inbox. Operators will be responsible for monitoring the Outage Reports inbox on a regular basis. The reason for adding access for MSRs is to allow for their support during large outage situations, similar to having them come in to aid in the processing of unresolved calls.

Note: Anyone processing these reports into Calls Manager will need to contact the person prior to posting an outage.

Submitted on Mon, 10/21/2019 - 22:35

Submitted values are:

Outage Reporting

Report an Outage
Test Test
123 N. FM 555
Stephenville, Texas. 76401
8175555555

Email
test@gmail.com

Outage Date and Time
Mon, 10/21/2019 - 19:33

Member Account Number
555555

What's Wrong? (e.g. power out, line down, blown transformer, etc.)
There is no power at our address but our neighbors on both sides have power. ʼ

Do you have more than one meter?
No