

**Q. Please provide documentation detailing the design and user operation of the Informer application.**

A. Newfoundland Power's Informer application ("Informer") provides the Company with the ability to communicate outage information to customers. Informer was designed and implemented by Newfoundland Power in 2012 to replace its legacy outage notification platform.<sup>1</sup>

When unplanned power outages occur or when a power outage is planned, details of the outage are entered into Informer.<sup>2</sup> These details include whether the outage is planned or unplanned, outage start time, the location of the outage, the cause of the outage, the estimated restoration time, and the equipment being impacted. This information forms the basis for the communications that are provided to customers.

When outage data is entered into Informer, outage information is automatically compiled and provided to customers in three ways. These are through the Company's power outage listing and power outage map on the Company's website, and through the Interlalia XMU+ high volume call answering system.<sup>3</sup>

During normal system operations, Newfoundland Power staff at the System Control Centre typically update Informer when unplanned outages occur. During significant customer outages, such as those experienced during the January 2-8, 2014 period, the Communications Hub takes responsibility for updating Informer.<sup>4</sup>

The Informer Design Specification used to develop the Informer Application is provided in Attachment A.

The Informer Quick Instructions document used by Newfoundland Power staff to operate Informer is provided in Attachment B.

<sup>1</sup> Prior to 2012 Newfoundland Power used the TVD Avalanche outage communications platform.

<sup>2</sup> Newfoundland Power conducts planned power outages to conduct maintenance, replace equipment, upgrade lines, and for various other reasons including to accommodate municipal construction projects in close proximity to energized lines.

<sup>3</sup> Newfoundland Power's power outage website address is <http://www.newfoundlandpower.com/Outages/>. See the response to Request for Information PUB-NP-123 for further information on Newfoundland Power's Interlalia XMU+ high volume call answering system.

<sup>4</sup> See the response to Request for Information PUB-NP-125 for information on the Communications Hub.

**Informer Design Specification**

# ***Informer Design Specification***

# 1 Outage Management

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This is the core application requirement. It is critical that the interface create an outage quickly and easily. Outages are usually “singular” events. However, occasionally it is necessary to create large scale or manual outages that impact many regions at once.

During an outage, there are a number of tasks that must be processed and monitored through to completion. If a failure occurs while processing an outage, after an (automated) unsuccessful re-try, notification must be given immediately to the IS Production Support Groups and the application user. The application will then continue with the next step in the outage process.

Generally for any Outage, the sequence of events will be:

- The user selects the location and enters the outage details.
- An audio file is constructed and validated by the user.
- Audio file is sent via FTP to Interailia. If there are more than one message file, each file is processed in order of creation. Only one file is sent at a time via FTP.
- The audio file is saved to a Server Share.
- The Outage Message is converted and updated on the Company’s Aspect IVR. This will happen automatically as the IVR will have a watch process that “listens” for changes in Outage message files.
- The Informer “Outage Map” is updated to show the new outage.
- Email and text messages are sent to the identified internal individuals or groups.
- A Log file is updated on the database to continually to show progress of each major step.
- Outage information is extracted and placed on the Corporate Website. This indicates relative size and location of the outage and provides additional outage details for customers who choose to drill in on the outage. This data is used to supply a Cloud Based Service which is linked to a customer facing outage map powered by ArcGIS online.

## 1.1 A New Outage

The Outage Map is the primary interface that provides the ability for a user to create a new outage. The user will click the color coded area (1 of 8) on the map that represents the Region where the outage has to be logged or will activate the Wide Spread/Manual Outage functionality.

*If a Large Scale outage is in progress, all regions that are currently part of that large outage are identified with special color and shading on the Outage Map interface. Is it not possible to create a new planned or unplanned outage (or edited) until the region is no longer participating in the outage. This is described in detail as part of the [Large Outage Section](#) in this document.*

*In some situations, Locations with no audio will be permitted. Locations with no audio will only appear in a planned outage drop down, if a manual message is currently overriding the audio.*

### 1.1.1 Planned Outage

To create a planned outage, the user will:

- Click the appropriate Region where the outage will occur to open the Outage Management List Window.
  - If a Large Scale Outage is currently active for the region, additional planned or unplanned outages cannot be created for that region (region is disabled). **The presence of a manual message is permitted.**
  - If another user currently has the region locked for editing, display a message indicating **User XXX** has the region locked. A lock will also appear on the main map window. The map window will be updated every 30 seconds or a user can refresh the display at any time by pressing the map icon or the standard F5 function key for refresh. **However, while locked, the Outage Management List Screen will appear as read only for viewing purposes and all subsequent functions on this window are disabled.**
- The Outage Management List window will present an ordered list of all TML (Transmission Lines), Substations and Feeders associated with that Region. This will function as described below in the [Outage Management List Section](#).
- The All Area option on this list window is similar to large scale. The key difference is it will provide flexibility to allow individual high level locations to be included and will also permit other outages for the same region to be created.
- From the Outage Management List Windows, select the location where the outage will be logged. Outages can be created for any level that appears in the list.
  - Once the location has been selected, lock the region so it cannot be edited by another user and display the Outage Detail Window.
- On the Outage Detail Window:
  - If a manual message is in place... display a banner at top of page to indicate a manual message exists that will be overriding the location message.
  - Individual locations (streets, neighborhoods and communities) associated with the list item selected are displayed and available for selection.

- Select the Restoration time from a drop list. Present all times in 5 minute increments on the 24 hour clock (also show special time periods, described in time system maintenance). The current time + 2 hours, is set as the first entry in the list. However, no default restoration time is set. A restoration time must be selected.
- The option to include the Restoration time in the audio file and on the web is defaulted to “Yes”.
- Select the Planned Outage Checkbox.
- Select the Planned Outage Date and Time. Present all times in 5 minute increments on the 24 hour clock. The nearest next half hour to the current time is set as the first entry in the list. However, no default is selected. A planned time must be selected. Using the date and time, the planned time cannot be in the past.
- By default no locations are selected. Click on each Check Box to include/exclude the location in the outage. At least one location must be selected.
- Only locations with an Audio file can be selected.
- The typical causes for an outage are listed and only one reason can be selected per outage. Scheduled Maintenance will be selected as the default Outage Cause. If typical reasons do not match the outage, a drop down list will contain all other causes. A cause must be selected.
- Notes can be entered directly at the bottom of the window in unedited plain text. A maximum of **2000** characters can be entered.
- Feeder count will be defaulted to number of customers on the feeder. An entry has to be made.
- Options to Save and Cancel are available.
- Save will return user to the list screen with the selected outage entry/icon indicating a planned outage status to indicate a planned outage with a future start time.
- Continue with processing the message, as defined in the [Message processing section](#) of this document.

### 1.1.2 Unplanned Outage

To create an unplanned outage:

- Click the appropriate Region where the outage will occur to open the Outage Management List Window.
  - If a Large Scale Outage is currently active for the region, additional planned or unplanned outages cannot be created for that region (region is disabled). **The presence of a manual message is permitted.**

- If another user currently has the region locked for editing, display a message indicating **User XXX** has the region locked. A lock will also appear on the main map window. The map window will be updated every 30 seconds or a user can refresh the display at any time by pressing the map icon or the standard F5 function key for refresh. **However, while locked, the Outage Management List Screen will appear as read only for viewing purposes and all subsequent functions on this window are disabled.**
- The Outage Management List window will present a list of all TML, Substations and Feeders associated with that Region. This will function as described below in the [Outage Management List Section](#).
- Make a selection of the location where the outage will be logged. Outages can be created for any level that appears in the list.
  - Lock the region so it cannot be edited by another user and display the Outage Management List Screen.
- On the Outage Detail Window:
  - If a manual message is in place... display a banner at top of page to indicate a manual message exists that will be over riding the location message.
  - Individual locations (streets, neighborhoods and communities) associated with the list item selected are displayed and available for selection.
  - Default the outage start date and time to the current date/time; however allow it to be updated should the user want to change it. It must be a time in the past if it is changed.
  - Select the Restoration time from a drop list. Present all times in 5 minute increments on the 24 hour clock (also show special time periods, described in time system maintenance). The current time + 2 hours, is set as the first entry in the list. However, no default restoration time is set.
  - Also, provide an ability to indicate if the outage time is extended. This will allow the outage message to state this is a revised time. For an unplanned outage, a restoration time must be selected.
  - User has the ability to allow the restoration time to be spoken or not, by selecting the checkbox toggle switch for this function.
  - The option to include the Restoration time in the audio file and on the web is defaulted to "Yes".
  - Select the Planned Outage Checkbox.
  - Select the Planned Outage Date and Time. Present all times in 5 minute increments on the 24 hour clock. The nearest next half hour to the current time is set as the first entry in the list. However, no default is selected. A planned time

- must be selected. Using the date and time, the planned time cannot be in the past.
- By default no locations are selected. Click on each Check Box to include/exclude the location in the outage. At least one location must be selected.
  - Only locations with an Audio file can be selected.
  - The typical causes for an outage are listed and only one reason can be selected per outage. If typical reasons do not match the outage, a drop down list will contain all other causes. A cause must be selected. However, an over-ride flag will allow the user to have the audio file created without the cause. A warning will have to be acknowledged if the user selected this option.
  - Notes can be entered directly at the bottom of the window in unedited plain text. A maximum of **2000** characters can be entered.
  - Feeder count will be defaulted to number of customers on the feeder. An entry has to be made.
  - Options to Save and Cancel are available.
  - Save will return user to the list screen with the selected outage entry/icon indicating a planned outage status to indicate a planned outage with a future start time.
- Continue with processing the message, as defined in the [Message processing section](#) of this document.



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Development Mode

Save Cancel

**BVS04**

☐ Planned?

**Start Date/Time:** 2014/03/28 09:04 AM

**Restoration Date/Time:** 2014/03/28 11:30 AM ☒ Include In Message? ☐ Include Further Update? ☐ Extended?

**Locations:**

☐ Select All ☐ Unselect All

☐ WATSONS POND  
☐ WEST VALLEY ROAD  
☐ BROOKFIELD AVENUE  
☐ GALLANTS  
☐ GEORGES LAKE  
☐ MACPHERSON AVENUE  
☐ MASSEY DRIVE  
☐ PINCHGUT LAKE  
☐ RAYMOND HEIGHTS  
☐ SPRUCE BROOK

**Cause of Outage:**

☒ Include In Message?

☐ Under Investigation  
☐ Scheduled Maintenance  
☐ Loss of Power Supply from NL Hydro  
☐ Equipment Problems  
☐ Severe Weather  
☐ Trees over power lines  
☐ Overhead line damage  
☐ Underground line damage  
☐ Pole Fire  
☐ Vehicle striking pole  
☐ Other: Fire

**# of Customers Affected:**  **# of Customers on Feeder:** 1408

**Notes:**

## 1.2 Existing Outage (Change or Delete)

The Outage Map provides the ability to modify an existing planned or unplanned outage. The user will click the color coded area on the map that represents the Region where the outage was logged (a counter displayed on each region, indicates number of planned and unplanned outages currently active for the region). The Outage Monitor section below will describe the presentation and monitoring capabilities of the [Outage Map Screen](#).

Processing an existing outage remains virtually the same for a new outage. Some of the exceptions will be the presentation of the outage on the Outage Monitor and Outage Management List Screen. Also the information on the Outage Detail Screen will be pre-populated with data from the existing Outage that was selected.

To maintain an Outage:

- Click the Region where the outage has been previously logged. This will display the Outage Management List Screen and lock the Region from editing by other users.
- If another user currently has the Region locked for editing, display a message indicating **User XXX** has region locked and allow view only on the Outage Management List Screen and disable all subsequent functions.
- Current outages for the region are presented at the top of the list screen.
- If multiple outages need to be removed, choose the clear all option on the screen to allow all outages to be cleared;
- Display a list of all TML, Substations and Feeders associated with that Region. This will function as described in the [Outage Management List Section](#).
- Two options exist for a “current” outage: Remove/Clear and Edit
  - Remove Icon
    - Lock the region so it cannot be edited by another user.
    - User will confirm the Outage has ended
    - Continue with processing the message, as defined in the [message processing section](#) of this document.
  - Edit Icon
    - Lock the region so it cannot be edited by another user.
    - All previously saved outage information will be populated on the Outage Detail Window.
    - At this point, all processing is handled as previously defined Outage Detail Window requirements while creating a planned or unplanned outage.
  - Cancel/Close
    - Return user to list screen. No changes are saved

- If the MAP icon is selected on the Outage Management List screen, the user is returned to the main Map screen and the Region is unlocked to allow other users ability to update or add Regional outages.

### 1.3 Checking the Audio File for Compliance

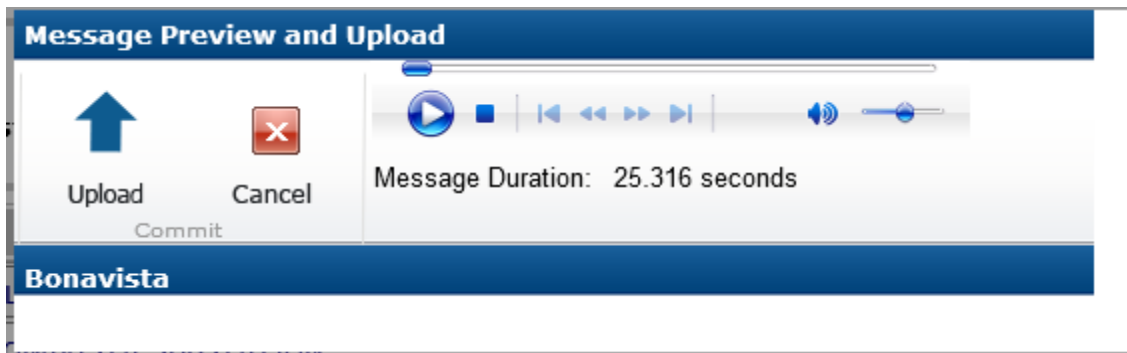
- Message Processing – Once user has pressed ok after creating or editing an outage
  - If SAVE is selected on the Outage Management List screen, calculate the combined message duration for all outages in the region. To construct a message:
    - First check to see if a manual outage exists for the region. If a manual message exists for the region, do not construct a new outage audio, use only the manual outage audio that was previously selected to override the audio file creation.
    - If a manual message does not exist, continue with the following steps:
      - Select the “MESSAGE OPENING” audio.
      - If there are multiple outages, group all messages with the same restoration time and cause together and only speak the restoration time and cause once for similar outages. Outages with a combination of different restoration times and causes must be spoken separately. If a restoration time is into the following day, the day of the week must be spoken as well as the time.
      - Include audio for each location participating in the outage. If multiple locations, before the last location is played, include the “AND” audio. If outage occurs at the Substation or at the Region level... only include the Region or Substation audio.
      - If one location, include the “AREA” audio after the last location is added. If multiple locations include the “AREAS” audio after last location is added.
      - Next add the “CAUSE” audio (check the exclude override ).
      - Next add the “ESTIMATED” audio or the “REVISED ESTIMATED” audio (check the exclude override ).
      - Next add the “TIME” clip (check the exclude override ).
      - Add “CLOSING” audio
    - If the total message length exceeds the maximum message length defined for the region (system parameter set per region):
      - Start with the single outage message that has the longest duration and remove the outage cause from the message.

- If the total duration is still too long for the Region, remove the cause for the outage with the second longest outage duration.
- Repeat the process for each individual outage until the message for the region is an acceptable length.
- If this process is exhausted and the message duration is still too long, an error message will be returned asking user to move the outage up another level or revise the selection process. The user is returned to the Outage Management List Window. In extreme situations, the maximum allowed outage time for a region can be extended while other regions time decreased. Or a manual override message can be used.
- Once message duration is within limits, present a Message Preview/Upload screen:
  - Display the Region, the location on the Interailia to receive the message, the message duration
  - Provide an ability for user to listen to the message (start, stop, pause)
  - The two primary options are Upload and Cancel
  - If Cancel is selected the user is returned to the Outage Management list screen. If Upload is selected:
    - Audio file is sent via FTP to Interailia as the highest priority task in the list of processes to occur. If there are more than one message file, each file is processed in order of creation. Only one file is sent at a time via FTP.
    - The audio file is saved to a Server Share.
    - The Outage Message is converted and updated on the Company's Aspect IVR. This will happen automatically as the IVR will have a watch process that "listens" for changes in Outage message files.
    - The Informer "Outage Map/Monitor" is updated to show the new outage.
    - Email and text messages are sent to the identified internal individuals or groups.
    - A Log file is updated on the database to continually to show progress of each major step.
    - Outage information is extracted and placed on the Corporate Website. This indicates relative size and location of the outage and provides additional outage details for customers who choose to drill in on the outage. This data is used to supply a Cloud Based Service which is linked to a customer facing outage map powered by ArcGIS online
    - If a failure occurs while processing an outage, after an unsuccessful re-try, notification must be given immediately to the Outage Application Admin

Group and the application user. In addition an error entry must be created in the application event log.

- The user is returned to the main Map screen and the Region is unlocked to allow other users ability to update or add Regional outages (unless this is part of a Large Scale Outage).

~~Database Access and Update See **FVOD-01 Create A Planned or Unplanned Outage**~~



## 1.4 Outage Monitor

After a planned or unplanned outage has been logged, a count of each type of outage will appear on the Outage Map for each region and a symbol will appear to indicate there is a current outage in effect. The application will monitor the status of the Outage by using the expected restoration time. If another user has that Region locked for editing, a lock symbol will appear on the region.

The first number in the count is number of unplanned outages, the second number in the count are the number of planned outages.

### UnPlanned Outages

If an outage approaches the threshold for expiration (system param), and there are no expired outages for this region, the color of the outage indicator will turn YELLOW to indicate an outage message is about to expire. Once the expected restoration time has passed, the YELLOW will turn RED and flash.

In addition, an auditable alarm will be heard and the user will have to respond to the message alert to deactivate the alarm. The user can choose to silence the alarm for 1 minute or to open the Outage for updating/deleting. If the alarm is silenced, the COLOR will continue to show.

If there are more than 1 outage that has expired and is alarming, the first Outage in the list will send the alarm until it is acted upon. Once that alarm is cleared or the associated outage is updated, the next expired outage in the list will alarm. All outages in alarm will display in the associated "alarm color" on the list screen.

### Planned Outages

If a planned outage approaches the threshold for activation (system param), and there is nothing expired for this region, the color of the planned outage indicator will turn YELLOW to indicate an outage is about to become due. Once the expected start time has passed, the YELLOW will turn RED.

In addition, an auditable alarm will be heard and the user will have to respond to the message alert to deactivate the alarm. The user can choose to silence the alarm for 1 minute or to open the Outage for updating/deleting. If the alarm is silenced, the COLOR will continue to show.

If there are more than 1 outage that has expired the RED and flashing will remain until all expired outages have been addressed.

Alarm states include

- Regional yellow shading for a warning (meaning something is about to expire)
- Regional flashing red shading and an auditable beep sound (meaning something has expired)

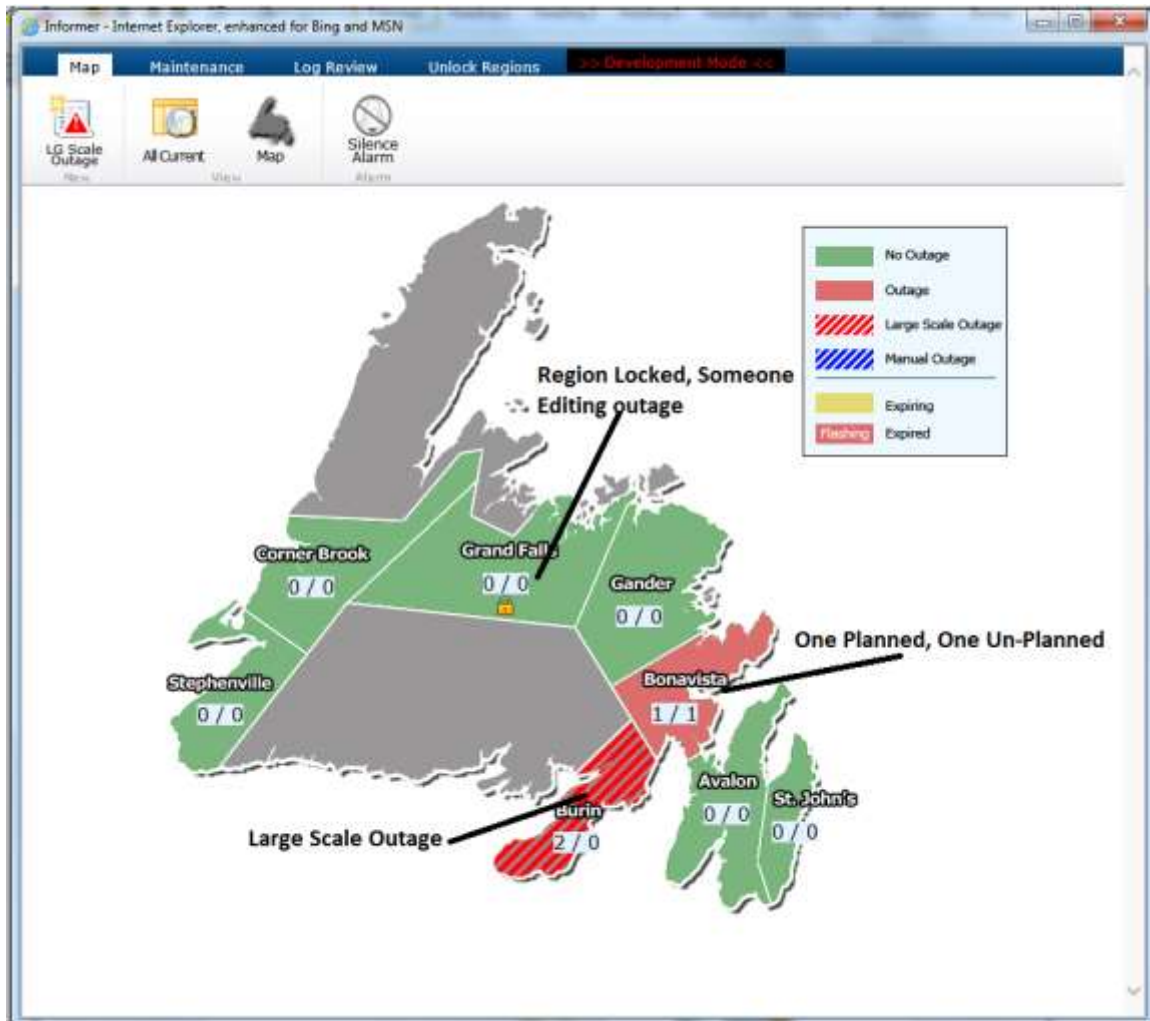
If the region is participating in a Large Outage, the complete region will have a pattern overlay assigned to indicate the abnormal condition.

### **Outdated Outages**

Occasionally, an outage message needs to be updated because of a course of action taken by another user. An example would be when a large scale outage is removed and there are underlying outages for the region which still need a message update.

When this occurs, an exclamation message will appear next to the Region. The user will immediately go to that region and update the existing update message by pressing save.

If a failure occurs while processing a message, the same warning symbol will appear indicating the outage needs to be saved again. Once a user selects that region, the failure status will also show on the List Window.



#### 1.4.1 Outage Management List Window

Once a region is selected, the Outage Management list window is presented.

All current planned and unplanned outages for the region (color coded for alarming if necessary) are listed at the top of the window. If a planned or Unplanned Outage currently exists, the current cause of the outage, planned restoration time, and the locations associated with the Outage is presented.

Following this list, a list of all TML, Substations and Feeders associated with that Region are displayed. To minimize the amount of necessary scrolling, by default, the individual locations are not presented. A Show Locations option will provide the ability to display all locations associated with the list. For entries that have an outage logged, the locations participating in the outage are also shown.

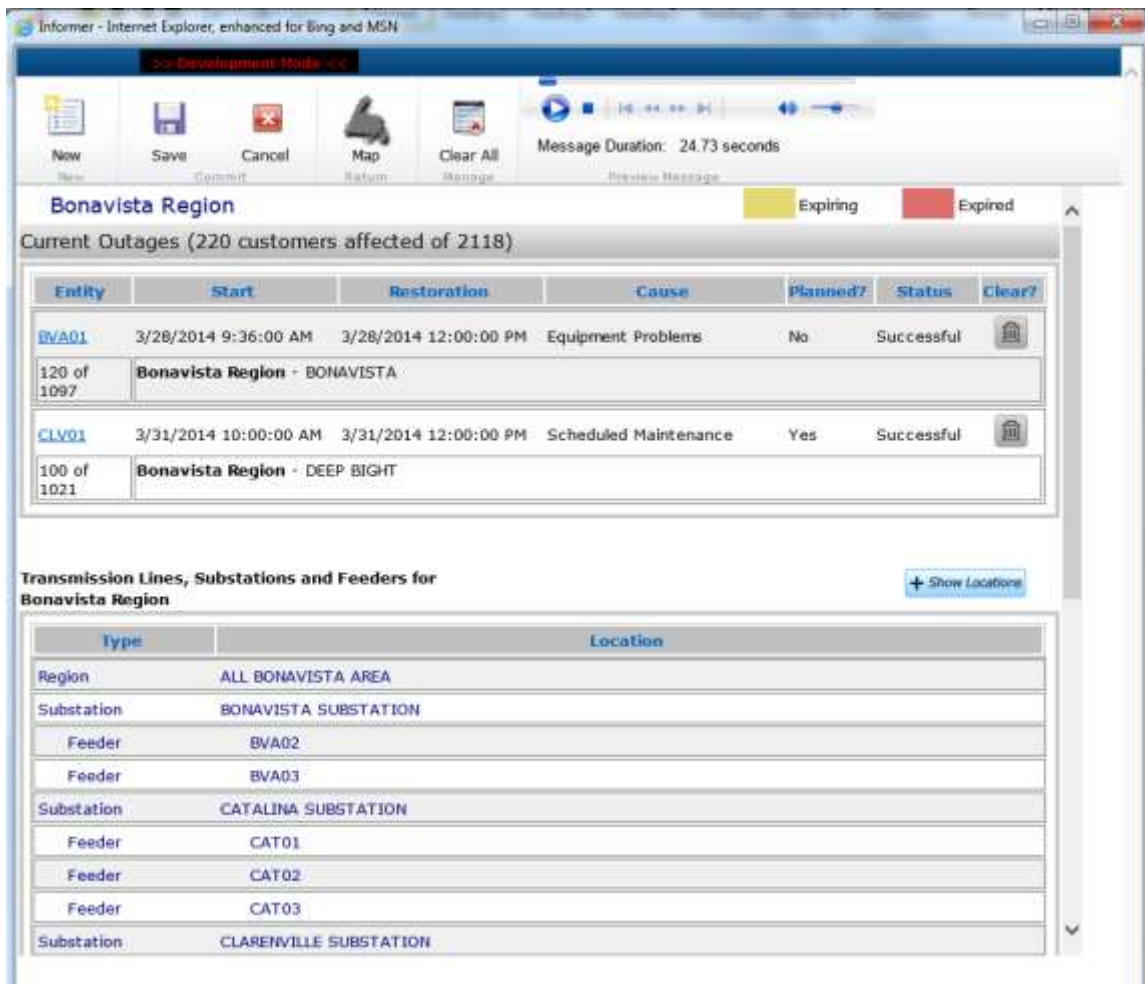


If any type Outage is in a warning state, the list item is presented in YELLOW.

If any type Outage is in an alarm state, the list item is presented in RED .

By clicking an individual list item (edit assumed), the [Outage Details](#) screen will appear and function as defined above (i.e. Clear/Remove, Edit, Cancel or bring you in to create a new outage).

By selecting the clear all, and the user acknowledges the request, all outage messages are cleared for the region.



Internet Explorer, enhanced for Bing and MSN

Development Mode

Now Save Cancel Map Clear All Message Duration: 24.73 seconds Review Message

### Bonavista Region

Expiring Expired

Current Outages (220 customers affected of 2118)

Entity	Start	Restoration	Cause	Planned?	Status	Clear?
BVA01	3/28/2014 9:36:00 AM	3/28/2014 12:00:00 PM	Equipment Problems	No	Successful	
120 of 1097	Bonavista Region - BONA VISTA					
CLV01	3/31/2014 10:00:00 AM	3/31/2014 12:00:00 PM	Scheduled Maintenance	Yes	Successful	
100 of 1021	Bonavista Region - DEEP BIGHT					

Transmission Lines, Substations and Feeders for Bonavista Region [+ Show Locations](#)

Type	Location
Region	ALL BONA VISTA AREA
Substation	BONA VISTA SUBSTATION
Feeder	BVA02
Feeder	BVA03
Substation	CATALINA SUBSTATION
Feeder	CAT01
Feeder	CAT02
Feeder	CAT03
Substation	CLARENVILLE SUBSTATION

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Map Maintenance Log Review Unlock Regions >> Development Mode <<

LG Scale Outage All Current Map

Expiring Expired

Large Scale Outages (11238 customers affected)

Entity	Start	Restoration	Cause	Planned?	Status	Clear?
<a href="#">ALL LOCATIONS</a>	3/28/2014 8:48:00 AM	3/28/2014 11:00:00 AM	Severe Weather	No	Successful	
11238	Burlin					

Current Outages (230 customers affected of 3329)

Entity	Start	Restoration	Cause	Planned?	Status
BLA01	3/28/2014 8:47:00 AM	3/28/2014 11:00:00 AM	Under Investigation	No	Successful
10 of 1211	Burin Region - ST. BERNARDS				
CLV01	3/31/2014 10:00:00 AM	3/31/2014 12:00:00 PM	Scheduled Maintenance	Yes	Successful
100 of 1021	Bonavista Region - DEEP BIGHT				
BVA01	3/28/2014 9:36:00 AM	3/28/2014 12:00:00 PM	Equipment Problems	No	Successful
120 of 1097	Bonavista Region - BONA VISTA				

## 1.5 Large Scale Outage

Periodically, the SCC must invoke a large scale outage that affects many or all regions at once. Outages of this type are indicated by a pattern shade of the entire region on the Outage Monitor Screen.

A large scale outage is initiated by selecting the option at the top of the outage map to create a large scale outage:

- All Regions are checked for current locking.
- If another user currently has any Region locked for editing, disable this region from participating in the large scale outage.
- Lock all regions that have a potential of having a large scale outage created.

### 1.5.1 Existing Large Scale Outage (Change or Delete)

If there is currently a Large Outage active, and the region is clicked, show the edit Large Scale Outage List screen where the following options are available:

- Remove/Clear
  - User will confirm the Outage has ended, all associated regions that have a large outage assigned will be cleared.
  - The default message for the associated regions will be activated. If prior outages existed for any of these regions, an exclamation symbol will appear for these regions, indicating an outage update is required.
  - The regions that were part of the large scale outage will be unlocked, and new unplanned/planned outages can be added again.
  - Processing, including message creation, Interailia upload, IVR Update, email and text alerts etc... will proceed as defined in the [Message processing section](#)
- Edit
  - The Large Scale Outage Detail Screen will be displayed with information prepopulated from the previously logged large scale outage.
  - All Regions not previously part of the large scale outage and are currently unlocked will be locked for editing and displayed to become available for the large scale outage. The previous regions that participated in the large scale outage will have a check mark next to them.
  - User will choose to:
    - Add or remove regions, change the expected restoration time, choose to indicate the outage is extended, change the cause, change notes

- If a new region is added that was not previously part of the large scale outage, and a regular unplanned outage exists for that region:
  - No further planned or unplanned outages can be added until the large scale outage is removed for the region
- If a region is removed that was part of a previously logged Large Scale Outage:
  - The Large Scale Outage for that region will be removed and replaced with the default outage message for that region.
  - The Region will become unlocked and allow processing of unplanned or planned outages for that region
- Processing, including message creation, Interailia upload, IVR Update, email and text alerts etc... will proceed as defined in the [Message processing section](#)
- Cancel
  - User is returned to Outage Monitor Map, no update is performed

Internet Explorer, enhanced for Bing and MSN

Map Maintenance Log Review Unlock Regions Development Mode

Save Cancel

### Large Scale Outage

System Wide Manual

Start Date/Time: 2014/03/28 08:48 AM

Restoration Date/Time: 2014/03/28 11:00 AM

☒ Include In Web Message? ☐ Include Further Update?

**Locations:**

☐ Select All ☐ Unselect All

- ☐ St John's
- ☐ Avalon
- ☒ Burin
- ☐ Bonavista
- ☐ Gander
- ☐ Grand Falls
- ☐ Corner Brook
- ☐ Stephenville

**Cause of Outage:**

☒ Include In Web Message?

- ☐ Under Investigation
- ☐ Scheduled Maintenance
- ☐ Loss of Power Supply from NL Hydro
- ☐ Equipment Problems
- ☒ Severe Weather
- ☐ Trees over power lines
- ☐ Overhead line damage
- ☐ Underground line damage
- ☐ Pole Fire
- ☐ Vehicle striking pole
- ☐ Other: Fire

Notes:

Created By: fflynn Created Date/Time: 2014/03/28 08:48

Modified By: fflynn Modified Date/Time: 2014/03/28 10:11

### 1.5.2 New Large Scale Outage

If there is a current large scale outage active, only regions not participating in the large scale outage can have a new large scale outage logged.

- Verify which regions are currently locked for editing.
- If another user currently has any Region locked for editing, disable this region from participating in the large scale outage.
- If there are currently other Large Scale Outages present in other regions, disable this region from participating in the large scale outage.
- Lock all other regions that have a potential of having a large scale outage created and display them in the large scale outage location drop down on the Detail Window.

- Processing, including message creation, Interailia upload, IVR Update, email and text alerts etc... will proceed as defined in the [Message processing section](#)

## 1.6 Website Update

From the perspective of displaying an outage on the corporate website, the intent is to use a regional map to show:

- Relative size of the outage (small, medium, large)
- Number of distinct 'reportable' outages in each region
- Large scale events are represented using a special symbol
- Additional details are available if user clicks the indicated outage
- User can zoom to a controlled level of map detail
- User can jump to the outage list on the website with some additional detail

All outages logged in the application will be geographically associated with either a substation coordinate or feeder midpoint. This information will be used to provide a position on the map to indicate the relative location of an outage.

Every 15 seconds, outages are extracted from the Informer Database and this information will be used to provide information for a cloud based service used by ESRI ArcGIS Online.

This information is also used to link the outage details to a list on the Company Website so the information is available to the user who wants to view the additional details regarding the outage, including: locations affected, start time, expected restoration time, cause, notes, update date and time.

If there is an under investigation cause or a relative restoration time of 30, 45, 90, 120 minutes... the restoration time is set to unknown on the map.

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\*\*\* NPSTAGE \*\*\*

### View Power Outages

Last updated: Fri Mar 28, 2014 10:22 AM

This information is as current as possible and is for general information only. The outages listed may not affect all customers in the specified location. If you are aware of an outage that is not on this listing, please [report online](#) or contact 1-800-474-5711 for further details.

Listing

Map

Refresh

☒ Unplanned

☒ Planned

#### Burin Peninsula

Outage Type	Location	Estimated Start Time	Estimated Restoration Time	Reason	Additional Information
Unplanned	ST. BERNARDS	Fri Mar 28, 2014 6:47 AM	Under Investigation	Under Investigation	
Unplanned	BURIN PENINSULA	Fri Mar 28, 2014 8:48 AM	Fri Mar 28, 2014 11:00 AM	Severe Weather	

#### Sunnyside - Clarendville - Bonavista Peninsula and vicinity

Outage Type	Location	Estimated Start Time	Estimated Restoration Time	Reason	Additional Information
Unplanned	BONAVISTA	Fri Mar 28, 2014 9:36 AM	Fri Mar 28, 2014 12:00 PM	Equipment Problems	
Planned	DEEP BIGHT	Mon Mar 31, 2014 10:00 AM	Mon Mar 31, 2014 12:00 PM	Scheduled Maintenance	

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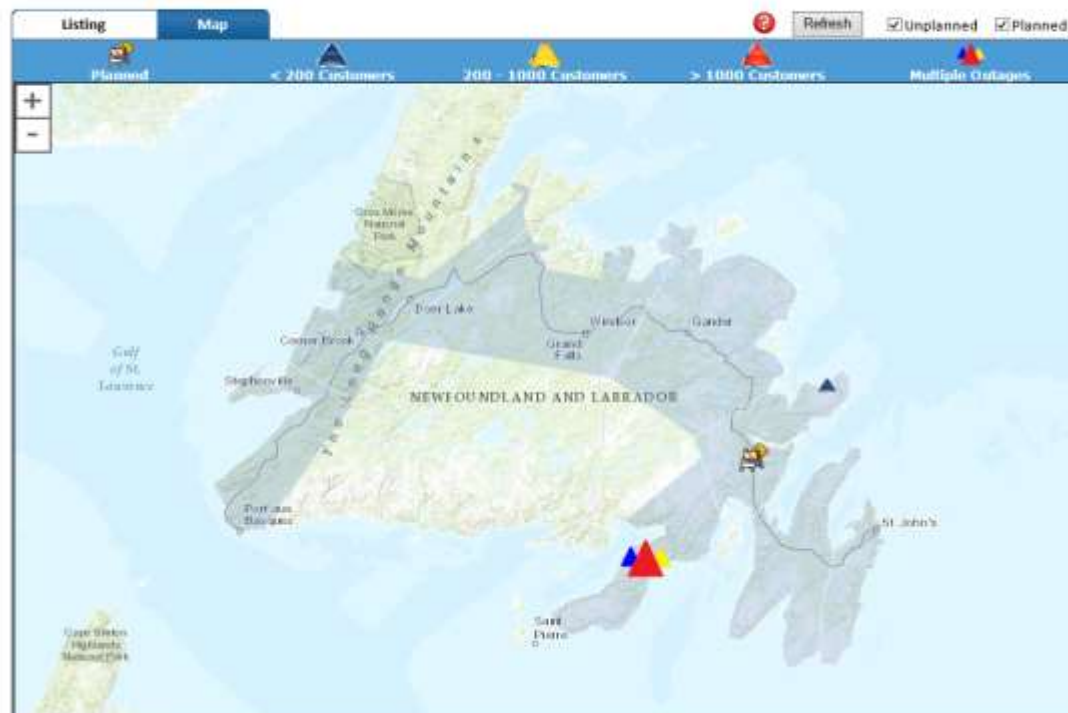
Think Safe. Live Safe.

©2014 Newfoundland Power: A Fortis Company

### View Power Outages

Last updated: Fri Mar 28, 2014 10:22 AM

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## 2 Message Override

---

On rare occasion, it is necessary to override the processing in the application and use a user provided outage message. The user will select the large scale outage option and choose manual as the type. Once manual is selected, the Manual Message Dialogue will appear.

It is necessary to select the Region(s), Manual Cause, and Restoration Time as this information is displayed on the website.

However for the message, the user will be presented with the list of previously uploaded manual messages.

Once selected, all existing outage audio messages for each region selected are replaced with this message.

Same locking rules apply to this functionality as it does to all other processing.

Similar processing occurs with this functionality as it does with a Large Scale Outage.

Once Manual is selected, other feeder and substation outages can be created for the region; however the audio played will be the Manual Outage Audio. While a manual outage exists, locations can be added to an outage that does not have a physical recording.

***Once a manual outage(or large scale) is removed, all unplanned outages for that region(s) are also removed... (a warning will indicate this situation that has to be acknowledged).***



Informers - Internet Explorer, enhanced for Bing and MSN

Map Maintenance Log Review Unlock Regions **Development Mode**

Save Cancel

### Large Scale Outage

☐ System Wide ☒ Manual

**Start Date/Time:** 2014/03/28 10:30 AM

**Restoration Date/Time:** 2014/03/28 01:00 PM ☒ Include In Web Message? ☐ Include Further Update?

**Locations:**

☐ Select All ☐ Unselect All

- ☐ St John's
- ☐ Avalon
- ☐ Bonavista
- ☐ Gander
- ☐ Grand Falls
- ☐ Corner Brook
- ☐ Stephenville

**Cause of Outage:**

☒ Include In Message?

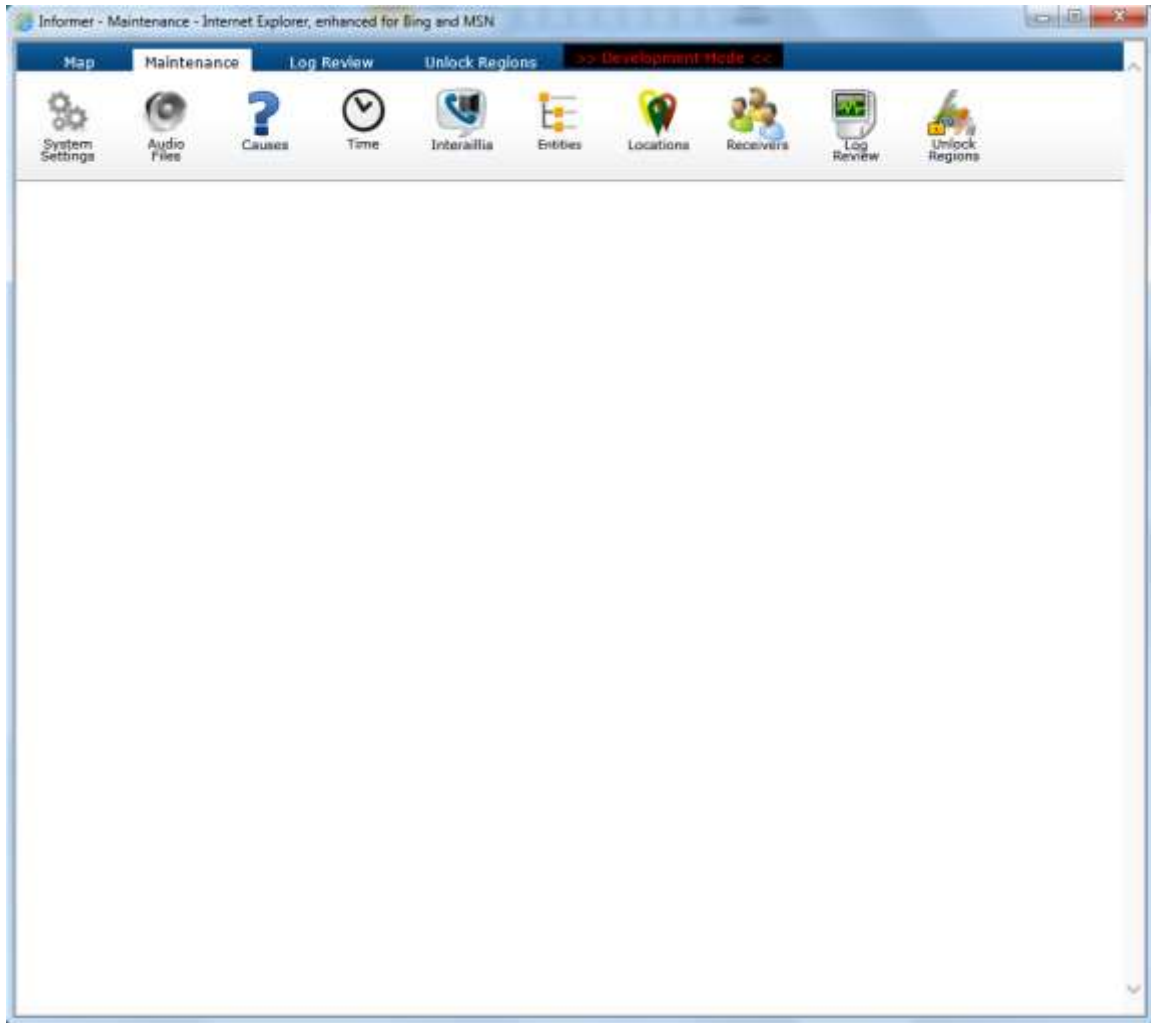
- ☐ Under Investigation
- ☐ Scheduled Maintenance
- ☐ Loss of Power Supply from NL Hydro
- ☐ Equipment Problems
- ☐ Severe Weather
- ☐ Trees over power lines
- ☐ Overhead line damage
- ☐ Underground line damage
- ☐ Pole Fire
- ☐ Vehicle striking pole
- ☐ Other:

**Manual Message:**        Duration: 0:00

**Notes:**

### 3 Maintenance

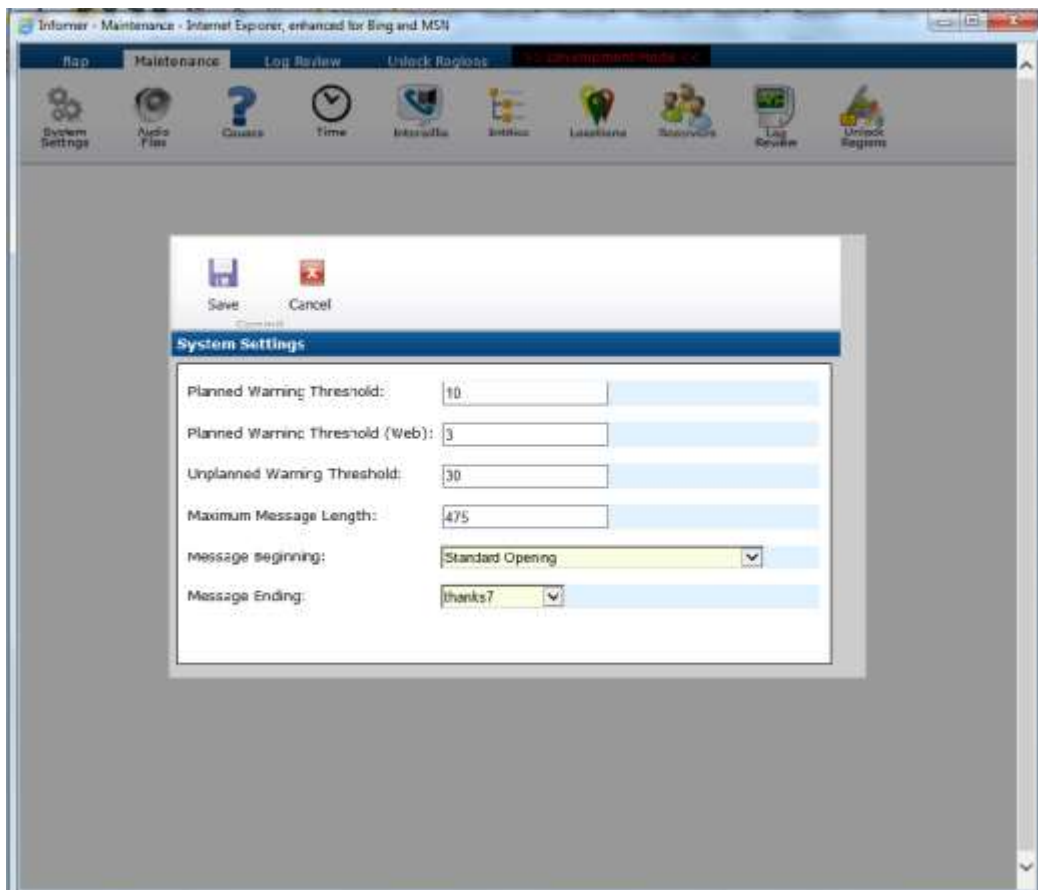
---



### 3.1 System Settings

Provides the ability to define and update core system parameters for system administrators:

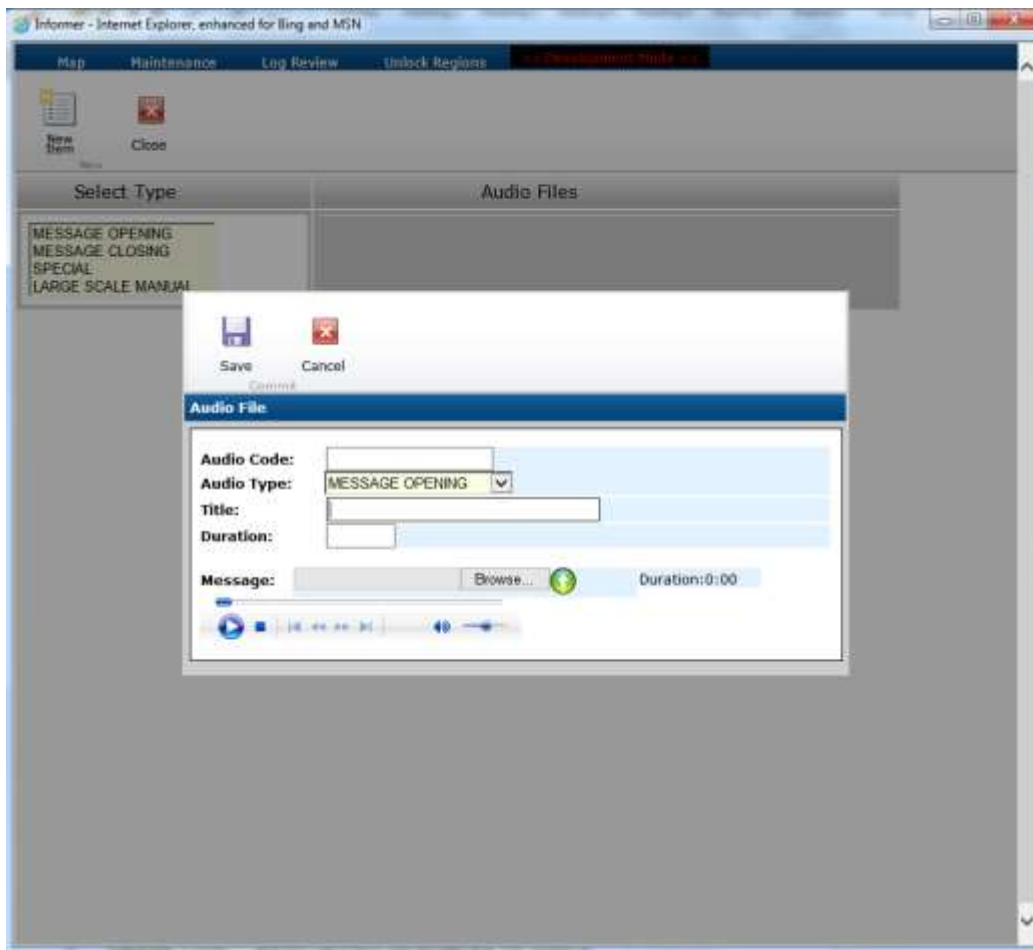
- **Planned Outage Warning Threshold** - number of minutes to begin displaying a warning to the user when a planned outage is about to become an active outage. Default - 10 minutes.
- **Planned Outage Warning Threshold Website** - number of days before outage becomes active to show outage on website. Default to 3 days
- **Un-Planned Outage Warning Threshold** - number of minutes to begin displaying a warning to the user that an un-planned outage is about to expire. Default - 30 minutes.
- **Maximum message length** – Maximum combined length of all outage messages in seconds. Default to 475 seconds
- **Message Beginning When Current Outage in Region** – Message opening when there is an outage in a region. Default to Standard Opening
- **Message Ending When Current Outage in Region** – Message close when there is an outage in a region. Default to standard thank you.



### 3.2 Audio Files

Provides ability to define audio files to be used in the application.

- Code - Identifier for the record stored in the db
- Audio Title - Friendly name for the audio file
- Audio Type – Type of audio file for use in special sections of the Informer application... such as a message opening, message close, manual message, or a special message
- Audio Message – The actual “WAV” codec audio file
- Audio Duration – Calculated audio file length in seconds

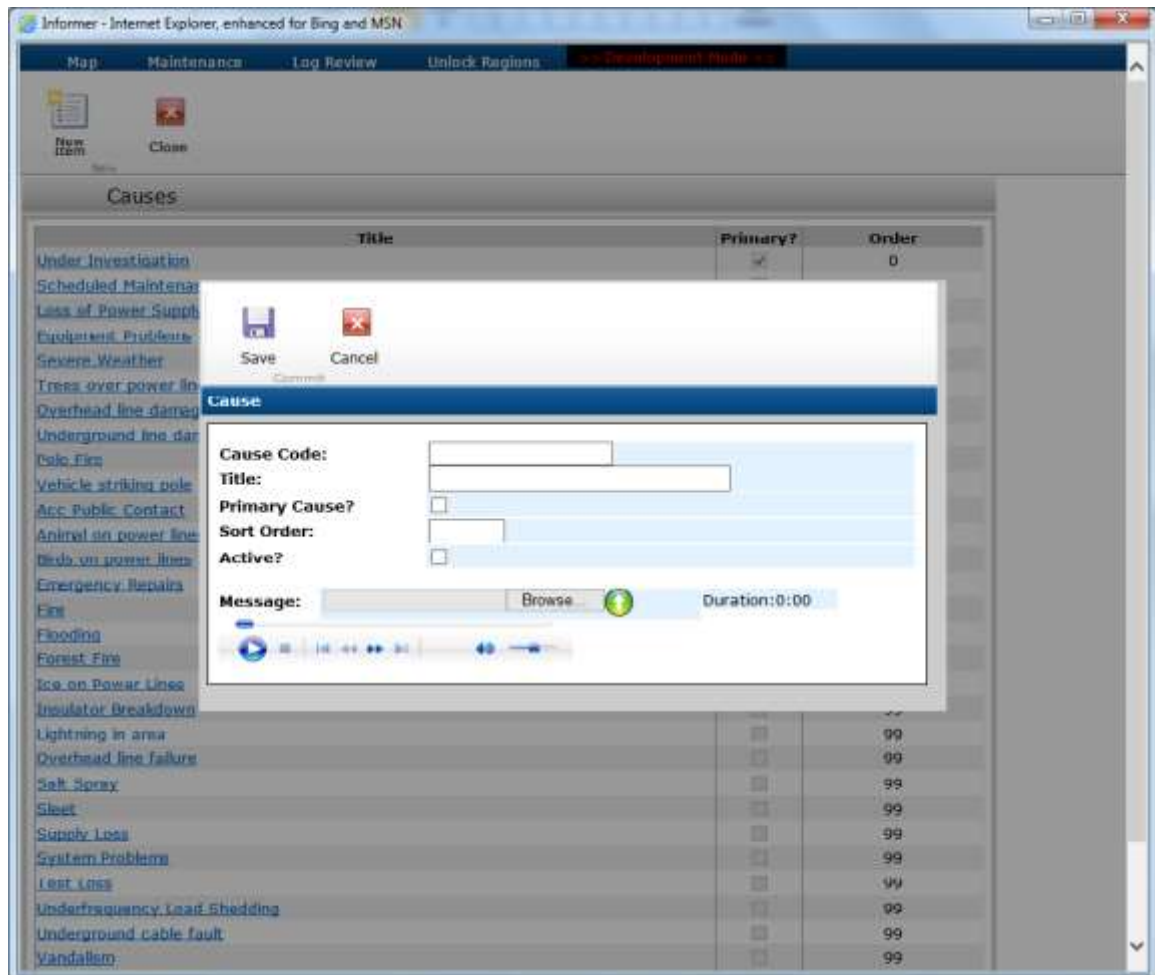


## 3.3 Causes

### 3.3.1 Cause

Provide the ability to update/add potential causes of an outage

- Cause Code - identifier for the record stored in the db
- Cause Title – description to display to users
- Primary cause indicator – used to indicate to display this item as a primary cause on outage details screen edit/creation window
- Sort Order - Order to display the cause on outage details screen edit/creation window
- Message – link to the audio file of type “cause” stored in the audio table
- Active – if cause is available to be displayed on outage details screen edit/creation window



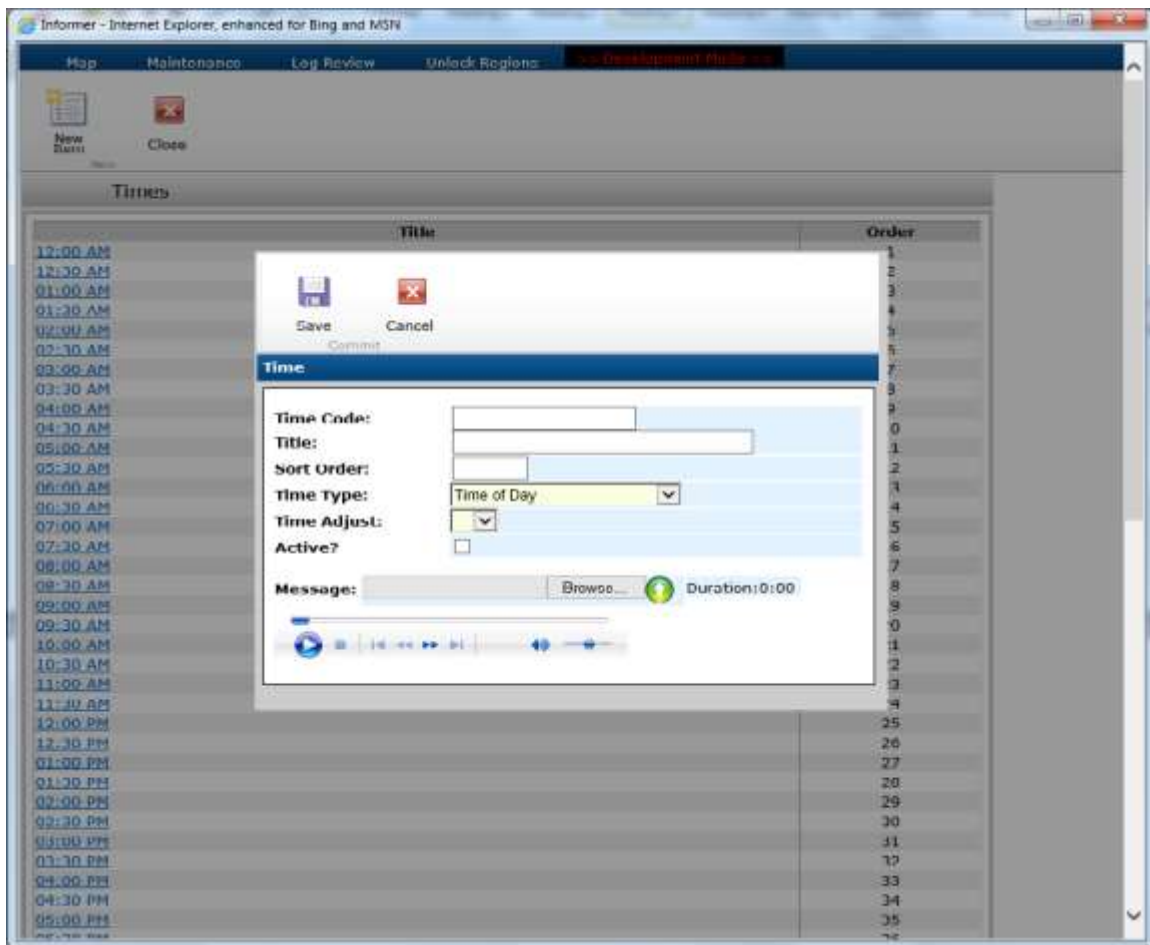
### 3.4 Time

Provide the ability to define time periods

- Time Code - identifier for the record stored in the db
- Time Title – User Friendly time description to display the time on outage details screen edit/creation window
- Actual Time (date time) – physical time used to control Informer time processing
- Sort Order – Display order for time period on outage details screen edit/creation window
- Restoration
  - Time Type - Valid values would be Time of Day or Time of day from current time
  - Time Adjust – Works in conjunction with type to allow time calculations to be relative (time from now) or an exact time. For example, if you choose to create an outage with a relative time of unknown, 30 mins... the Time Adjust would be 30 mins from now. This adjustment is what is used to create the restoration time given to an outage record. (valid values would be 30, 45, 60, 90)
  - Message - link to the audio file of type “time” stored in the audio table
- Active - if time is available to be displayed on outage details screen edit/creation window

Note: There are a number of special time periods that provide alternate time periods... such as:

- Each day of the week with morning, afternoon and evening periods. For example: Monday Morning, Monday Afternoon, Monday Evening. These have predefined time period assigned and a generic restoration message.
- Unknown Periods based on a time from current time. For example: Unknown 30 minutes, Unknown 45 minutes, Unknown 60 minutes, Unknown 90 minutes.



### 3.5 Interailia – XMU +

Special receiver (Interailia) that receives the outage Audio Files. There is one entry configured for each region.

#### ***Add/Delete functions are disabled on Interailia***

- Code - identifier for the record stored in the db
- Region – what region is the message associate with
- Maximum Message Length – maximum length in seconds for the audio file creation
- IP Address - IP address of the Interailia XMU + appliance
- Message Number – XMU+ Message number, associated with the region
- Enabled Flag – If the VMU+ feed is enabled
- Note

The screenshot shows a web application titled "Interailia" running in Internet Explorer. The main interface has a table with columns: Region, IP Address, and Max Message Length. The table lists several regions: St John's, Avalon, Aukin, Bonaville, Gander, Grand Falls, Lorne Brook, and St. John's. A modal form is open in the center, titled "Interailia". The form contains the following fields:

- Interailia Code: (text input)
- Region: (dropdown menu, currently showing "St John's")
- IP Address: (text input)
- Message #: (text input)
- Max Message Length: (text input)
- Enabled?: (checkbox)
- Notes: (text area)

At the top of the modal form, there are "Save" and "Cancel" buttons. The background table shows the following data:

Region	IP Address	Max Message Length
St John's	192.168.101.94	59



## 3.6 Regions/Entities

Defines the structure for the tree view displayed on Outage List Window

### 3.6.1 Regions

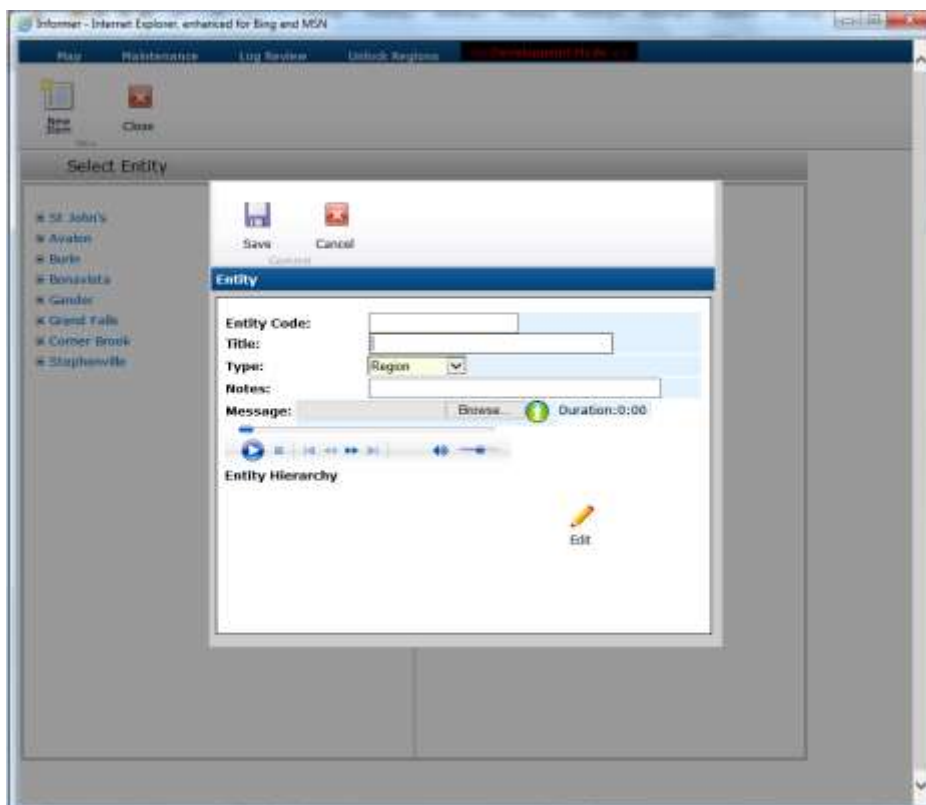
Regions are a primary construct in the Outage application. There will be no ability to add, change or delete a region within the application.

- Region Code (identifier for the record stored in the db)
- Region Title – User Friendly description of Region

### 3.6.2 Entities

Provides ability to define Substations, TML, and Feeders in the application. These are the intermediate configurations used in the application to identify TML, Substation and Feeder structures. Entities are directly related to Regions.

- Entity Code - identifier for the record stored in the db
- Entity Title – user friendly label for the entity
- Entity Type – One of Region, Substation, Transmission Line, Feeder
- Position location – where to display indication of an outage affecting this location on the map
- Message – Audio recording associated with the entity



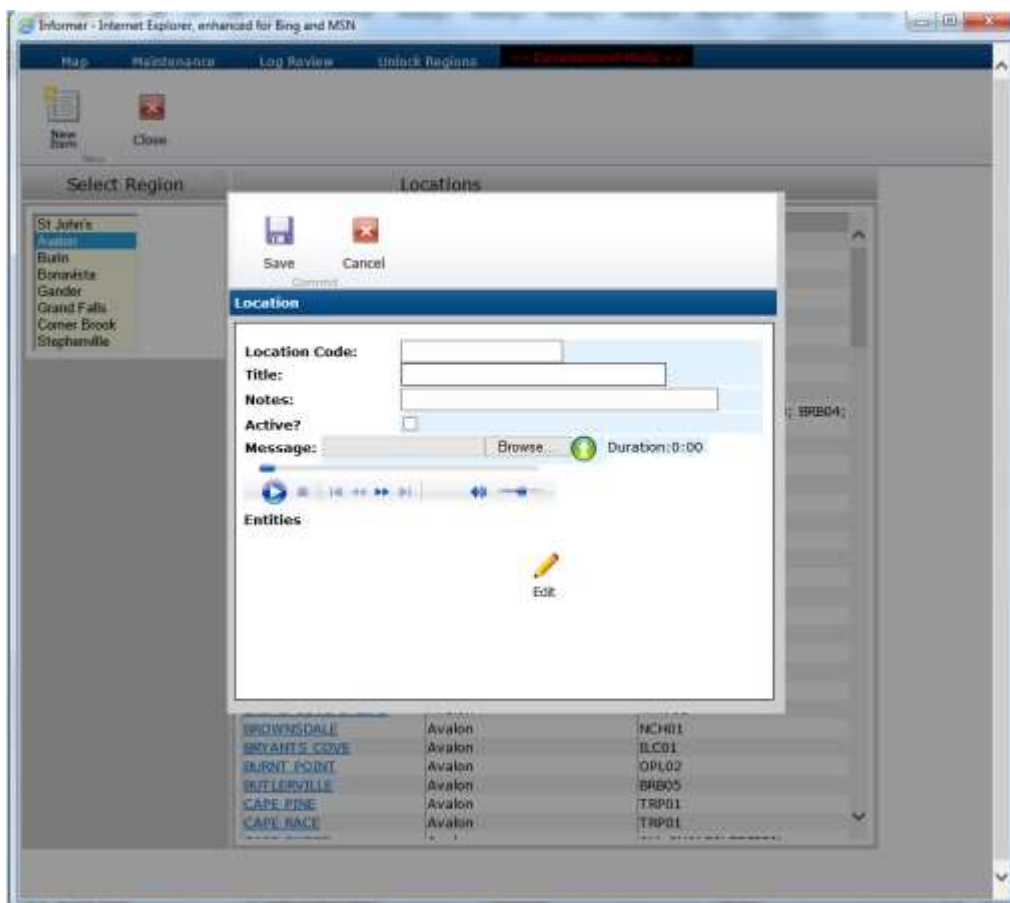
### 3.7 Locations

Provides ability to add locations (streets, communities, places). This is the lowest level of “geographic” identification of an outage in the application. Locations are directly related to Entities. If no audio file is specified, a warning will appear that must be acknowledged. Locations with no audio will not appear in the Unplanned Outage dropdown. Locations with no audio will only appear in a planned outage drop down if a manual message is currently over riding the audio.

If an audio file is loaded, all 3 audio files must be loaded or an error is returned and save is prevented.

If same location is selected for another feeder or substation (not associated with feeder), display a warning that must be acknowledged.

- Location Code (identifier for the record stored in the db)
- Location Title
- Location Message Audio



## 3.8 User/Receivers

### 3.8.1 Users

Three separate Active Directory user groups. Not defined in the application.

- Roles – Read only, Standard, Administrative

For a read only user, no outages can be created or modified, table maintenance functions are disabled.

For a standard login, the user can create and maintain outages, table maintenance functions are disabled

As an admin login, the user can create and maintain outages, table maintenance functions are enabled.

### 3.8.2 Receivers

Recipients can either be a named user or a user group registered with Active Directory.

- Code - identifier for the record stored in the db
- Name – from list of defined users
- Type – for now email only
- Address – for now email address of user or group
- Region (repeating 1 to n) – The region this alert is associated with

The screenshot shows a web application interface within an Internet Explorer browser window. The browser's address bar shows 'Informa - Internet Explorer, enhanced for Bing and MSN'. The application has a menu bar with 'Map', 'Maintenance', 'Log Review', and 'Unblock Regions'. Below the menu is a toolbar with 'Save', 'Cancel', and 'New Item' buttons. The main content area is titled 'Receiver' and contains a form with fields for 'Receiver Code:', 'Receiver Name:', and 'Active?'. A 'Receiver Medium' dialog box is open in the foreground, featuring a 'Save' and 'Cancel' button at the top. The dialog box has a 'Receiver:' field, a 'Medium Type:' dropdown menu set to 'Email', an 'Address:' text input field, and an 'Active?' checkbox. To the right of these fields is a 'Select Region(s)' section with a list of regions: St John's, Avalon, Burn, Bonavista, Gander, Grand Falls, Corner Brook, and Stephenville, each with an associated checkbox.

### 3.9 Log Review

Provides the ability to review the progress and completion status of core application processes including: email notification, text alerts, RVA file upload

#### 3.9.1 Log list

This window will display an ordered list by date time of all outage actions completed within the date range selected. The default selection period is the current day. A user will have the option to indicate/change the date range.

Also, on this window, the user will have options to Refresh the list, Preview or Close the window.

The list will display:

- Message Type
- Status: i.e. in progress, succeeded, failed
- Date/Time
- Entity Name
- Template Type: i.e. Email, Text, Interailia
- Notification Type: Start upload, End Upload, etc...

By double clicking an entry the Preview and Audit screen will be displayed.

As a visual indication, the list entry will be colored red or green to indicate the status of the event. Red indicating there was an error, green indicating it completed successfully.

##### 3.9.1.1 Message Preview

Once an entry is selected for review the user will be presented with the Preview Window. This window will show the contents of the message sent.

Informers - Internet Explorer, enhanced for Bing and MSN

Map Maintenance Log Review Unlock Regions > Development Mode <

Close  
Close

### Log Review

Message Type:  Status:

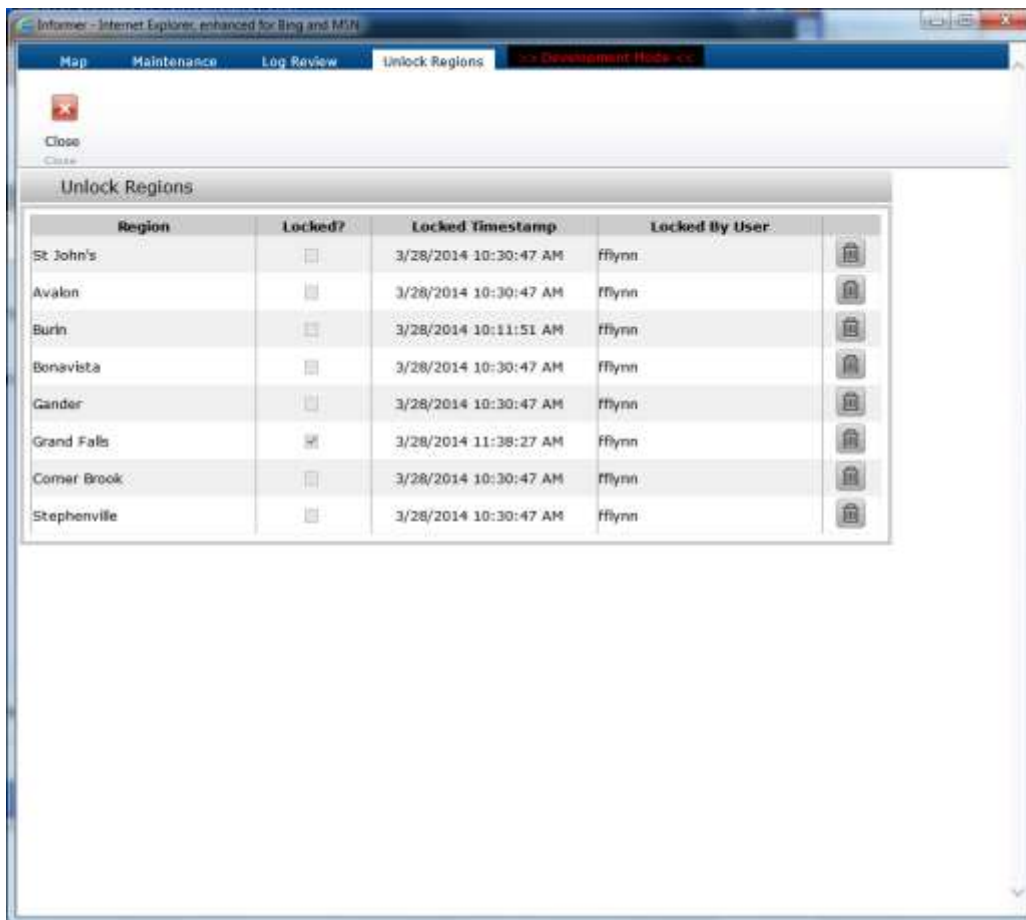
Start Date:   End Date:

Entry	Create Date	Region	Create User	Planned?	Status
BVA01	3/28/2014 9:47:49 AM	Bonavista	fflynn	N	Success
End message upload to Interalla via FTP					
BVA01	3/28/2014 9:47:48 AM	Bonavista	fflynn	N	Success
Start message upload to Interalla via FTP					
ALL LOCATIONS	3/28/2014 8:49:00 AM	Burin	fflynn	N	Success
End message upload to Interalla via FTP					
ALL LOCATIONS	3/28/2014 8:48:59 AM	Burin	fflynn	N	Success
Start message upload to Interalla via FTP					
BLA01	3/28/2014 8:48:25 AM	Burin	fflynn	N	Success
End message upload to Interalla via FTP					
BLA01	3/28/2014 8:48:24 AM	Burin	fflynn	N	Success
Start message upload to Interalla via FTP					

### 3.10 Unlock Regions

Provides the ability to override a region lock. This would be necessary if a user started editing or creating a new outage and went away from their desk for an extended period of time.

Press the Delete function and acknowledge the pop up to confirm the removal of the lock.



**Informer Quick Instructions**

## Regular planned or unplanned outages

- From the Ribbon Bar at the top of your browser, click on the MAP icon ([see image 3](#)). By clicking the map icon, a complete application refresh is invoked and the most recent Informer data is displayed, showing all updated outages. Refreshing the map by clicking the map icon is recommended before any change. Otherwise the map updates approximately once every 4 to 5 minutes.
- Mouse over the Region Label where you want to create an outage. Once the label turns yellow, press once on the Region label... ie St John's
- All current outages for the Region will be listed at the top of the window ([see image 20](#))

### Making a change - Step 1

- **Create a New Outage**
  - Scroll to the required sub, feeder, TML in the list and select the entry to create an outage for by pressing the hyperlink ([see image 21](#)). The selection will turn color.
  - Once the entry is highlighted, click the New icon ([see image 12](#)) at the top of the window.
- **Clear the outage**, press the trash can icon ([see image 19](#)) on the row associated with the outage you want to remove. When prompted to clear, choose the clear option. If a mistake was made and you do not want to clear, choose the close option on the popup.
- **Edit the Outage**: click on the hyperlink ([see image 11](#)) for the substation, feeder or transmission line to the immediate left of the row indicating a current outage. This will display a details window where you can change information associated with the outage. Once changes are completed, press Save ([see image 23](#)). If you do not want to keep the changes, press Cancel ([see image 24](#)).

### Save the change - Step 2

- **Saving the changes permanently**
  - **Once changes are completed and you want to save the information permanently, you must press Save ([see image 13](#)) on the main list window.**
  - At this point you will be presented with an upload window where you should listen to the audio file being created. Press the Play icon ([see image 47](#)) on the media player.
  - If you are satisfied with the audio, press upload ([see image 45](#)). This will send the audio file to the Interailia and send email notifications... this may take up to a minute to complete. The status on the list screen will show new, pending, successful or failure ([see image 17](#)).

### Confirm the change - Step 3

- At this point you are brought back to the map and will see the outage counter impacted based on the action you performed and the outage region will turn red ([see image 8](#)).



- You should click on the region you created the outage for and review the status of the outage update on the list screen ([see image 17](#)). Do not send another message for the same region until this status has shown Successful. If it fails for any reason, press Save ([see image 13](#)) again to verify it completes successfully. While on the region screen, you can play the current audio message for review.
- Email will be received in approximately 60 seconds after an outage update.
- Note:
  - While a user is making a change to an outage in any region, other users who are using the application will see a small yellow lock appear on the region ([see image 6](#)). This indicates no other user can change a message for this region until the locking user completes their change. If you click the region under this scenario, the list screen will appear in Read only and a message at the top of the window will show who has the region locked and when the lock started.
  - If a user started making a change and closed the application before completing the change, a lock will remain displayed on the regions associated with the change. A red message will appear at the top of the window, indicating what user has the region locked and when the lock started. If the same user opens the region they had previously locked, they will unlock the region. If the lock is only minutes old, the user who holds the lock could still be creating an outage for the region. If the lock seems to be held for an abnormal amount of time, the user who has the region locked should be contacted, to be asked why the lock is held. If the user cannot be contacted, there is an unlock function that can be accessed from the maintenance menu. Select the Unlock Regions function ([see image 50](#)) and press the delete icon ([see image 52](#)) associated with the locked region to remove the lock ([see image 51](#)).
  - Once an outage is near expiry, the region will turn yellow ([see image 4](#)). Once the outage has expired, it will turn red, blink and “beep”... indicating an immediate update is required. The user must click this region and edit or delete the message. The user can temporarily silence the alarm for 60 seconds using the silence alarm function.
  - Planned outages do not turn red or upload to HVCA, if they are created ahead of time. They follow the same color rules as they become near to their due time (within 15 minutes) or expired. The unplanned outage will upload to the website if within the number of days defined under system parameters, website upload buffer.
  - The unplanned outage count is to the left and the planned outage count is to the right ([see image 49](#)).
  - To exclude the restoration time in the message, deselect the “include in message” checkbox ([see image 27](#)).
  - To exclude the cause in the message, deselect the include cause in message checkbox ([see image 29](#)).
  - To indicate the outage has an extended or revised time ([see image 26](#)).
  - Under Investigation will default to no restoration time being spoken in the audio. However, this by selecting the include in Message Check Box ([see image 27](#)).
  - Regular outages are represented as triangle shaped icons on Newfoundlandpower.com web map. A Red icon represents a large outage (> 1000), an Orange triangle represents a medium

sized outage (200 – 1000) and a Yellow triangle represents a small outage (< 200). A Planned outage is represented with a safety barricade. The web user can click each icon for further details. Panning and zooming functions are supported on the web map. A large scale outage is represented by a larger “3 Triangle” Symbol.

- The number of customers affected on the Feeder must be entered (see image 33). If select all locations is checked (see image 28), the number of customers will be defaulted to the total number of customers found on the feeder (see image 34) .
- If this outage is a planned outage, select the Planned Outage checkbox (see image 22). Planned outages show on the website, 3 days in advance.

## Large Scale Outages

### Create a new Large Scale Outage

- From the Ribbon Bar at the top of your browser, click on the Large Scale Outage Icon [\(see image 1\)](#).
- This will immediately present a detailed window where all regions that are not currently participating in a Large Scale Outage will be available for selection [\(see image 37\)](#).
- Choose the type of large scale outage [\(see image 35\)](#). Depending on the type, other default options will be available... such as an Under Frequency outage will default the cause to System Problems; A Manual Outage will activate selections at the bottom of the window [\(see image 39\)](#) to allow a custom message to be selected.
- Once satisfied with the information, press Save [\(see image 41\)](#).
- An upload window is presented. Listen to the audio file being created [\(see image 44\)](#). Press the Play icon on the media player. There is a custom message for System Wide and UnderFrequency outages. The Manual message is whatever the user selected and will override any small scale outage message for the region.
- Once the audio is verified, press upload [\(see image 43\)](#). This will send the audio file to the Interailia and send email notifications... this may take up to a minute to complete. The status on the list screen will show new, pending, successful or completed [\(see image 17\)](#). No further action should be taken until the status is successful.
- If you are not satisfied with the message you hear while verifying the audio, click cancel [\(see image 42\)](#) to prevent the upload and continue to make changes. Otherwise, click cancel once again [\(see image 40\)](#) on the Large Scale Create window to abort the update entirely.

### Maintain/Clear a Large Scale Outage

- From the Ribbon Bar at the top of your browser, click on All Current Outage Icon [\(see image 2\)](#) or Select a region that has Large Scale Outage shading present [\(see image 5\)](#).
- If you clicked the All Current Outage Icon, all Large Scale Outages are listed at the top of the window, very similar to what is displayed on the Region List Screen [\(see image 20\)](#). Click on the hyperlink to the immediate left of any row to change the Outage or click on the clear icon to the far right to remove the outage... also very similar to Region list screen [\(see image 11 and 19\)](#).
- If you choose to change the outage, this will present the original Large Scale Detail window where further changes can be made. Note, at this point you cannot add new regions to the outage. Also you cannot change the type of Large Scale Outage. If this must be done, you must delete this Large Scale outage and create a new one... or create a new large scale to for the other region(s).
- Once satisfied with the information, press Save on the Large Scale Region Window [\(see image 41\)](#).

- Listen to the audio file being created. Press the Play icon on the media player **(see image 44)**. There is a custom message for System Wide and UnderFrequency outages. The Manual message will be the customized audio file the user selected and will override any small scale outage message for the region.
- Once the audio is verified, press upload **(see image 43)**. This will send the audio file to the Interailia and send email notifications... this may take up to a minute to complete and the status is displayed on the list screen **(see image 17)**. No further action should be taken until the status is successful.
- If you choose to clear the outage, a window will appear asking you to confirm. Once done the Large Scale Outage is removed.
- Note:
  - As a user is making a change to a large scale outage, any region which has potential to participate in the outage will be locked. Other users who are using the application will see a small yellow lock appear on each region, this indicates no updates can occur until the user completes their change **(see image 6)**. If you click the region under this scenario, the list screen will appear in Read only and a message will indicate who has the region locked and when the lock started **(see image 53)**.
  - If a user started making a change and closed the application before completing the change, a lock will remain displayed on the regions associated with the change. A red message will appear at the top of the window, indicating what user has the region locked and when the lock started. If the same user opens the region they had previously locked, they will unlock the region. If the lock is only minutes old, the user who holds the lock could still be creating an outage for the region. If the lock seems to be held for an abnormal amount of time, the user who has the region locked should be contacted, to be asked why the lock is held. If the user cannot be contacted, there is an unlock function that can be accessed from the maintenance menu. Select the Unlock Regions function **(see image 50)** and press the delete icon **(see image 52)** associated with the locked region to remove the lock **(see image 51)**.
  - A large scale outage message will override any small outage messages that exist for the region.
  - Once a large scale outage has been removed for a region, and if there are smaller outages that still exist for the region **(see image 48)**, the Informer Map will indicate that the outage audio has to be “re-saved”.
  - Once a large scale outage is active for a Region, the region will be shaded in red and have a pattern assigned to the region to indicate a large scale outage is in effect **(see image 5)**.
  - Once an outage is near expiry, the region will turn yellow **(see image 4)**. Once the outage has expired, it will turn red, blink and beep... indicating an immediate update is required.
  - On the Map, the unplanned outage count is to the left (this includes large scale) and the planned outage count is to the right **(see image 49)**.
  - For a Manual Outage **(see image 35)**, you can decide to add locations “on the fly” for individual feeders that are out. These locations will not have audio, just text which displays

on the website. When the manual outage is removed, the locations without audio will be removed. A manual message will appear similar to a Large Scale outage, however it is shaded in BLUE.

- Under unique circumstances, the check box to indicate... “an update will be provided” can be selected on the Large Scale Edit Window. This will update the audio file with a time supplied by the user **(see image 36)**.

## **Some Important changes/improvements**

### **Large Scale Outage.**

1. You can now create a large scale outage for one or more regions. Previously this was not possible. Previously any large scale outage on the website and phone system would show a major outage was impacting the whole island as opposed to a subset of individual regions.
2. You can also have different large scale outage messages playing in each region or same message/outage active for many regions.
3. Large Scale outages are immediately visible on the Map to indicate multiple outages affect a wide area.
4. Once a Large Scale outage has ended, you can quickly resume with the individual outages in the regions; The individual outages remain active, and the user is prompted to update them.
5. Large Scale outage messages are integrated directly with the messaging playing in the contact center and on Newfoundlandpower.com website. Previously there was no integration to the outage message heard on "2802" when a large scale outage message was active on "5711"
6. Additional silence is added at the end of the audio message to avoid having users who hang up late from going directly to Contact Center. This will help prevent customers from getting a busy signal during a large outage event and reduce congestion on Contact Center phone lines.
7. Under Frequency as a cause has been removed. This was confusing to customers... an Underfrequency event is defaulted to System Problems.
8. You can now update the start time of an outage, which would be needed if it was decided to load a previous outage.
9. An ability has been added to include a message advising that an update will be provided at a user defined time.
10. A number of message creation over-ride options allow the user to define what components can be included or excluded from message creation and website presentation.

### **Manual Outage**

1. In addition to the Large Scale above, there is now the ability to load a manual message through the application. You do not have to call the Interailia and directly speak the "manual" message into the phone system. This way all information is integrated and the same message will play on both the Outage ("5711") line and business ("2802") line and show on the website.
2. Manual messages are now part of the Application Messaging and can be used repeatedly for future outages without being re-recorded. If the manual message is a true "one of", it can be deleted and no longer will be available for reuse.
3. Once a manual message is in effect... individual region outages can be created to include many different locations/streets. This allows much more information to be displayed on the website.
4. In addition, if more street level detail is needed to show on the website... Informer allows the user to add streets/locations/"land marks"... "on the fly". These locations will show in the text listing on the website.
5. Manual outages are distinguished on the Map with Blue Large Scale Coloring.

6. When the manual outage is completed, the individual region outages remain, allowing quick access to update the individual messages.

### **All Outages List**

1. There is a quick view screen that provides immediate access to all logged outages.
2. Large scale outages are listed at the top of the screen, while regular outages are listed in the second half of the screen... grouped by region
3. Customer counts are summarized on this window, this providing a quick overall outage impact customer summary.

### **Regular Outages**

1. Interface has been tweaked to make usability and navigation simpler.
2. If we have multiple outages with same restoration time and cause, they are grouped together and only spoken once, decreasing the total message length.
3. You can choose to include or exclude restoration time and cause when creating an outage. This way users have a greater ability to create an appropriate message for customers.
4. In addition, Restoration Time is not included in audio if Under Investigation is chosen as the "cause". Giving a restoration time while the cause is Under Investigation was misleading in the old application and could not be changed. Informer will provide the ability to override this, if needed.
5. Once a user is updating an outage message in a region, the region is locked... preventing others from making changes while you are in the process of creating an outage for that region. This prevents multiple people from creating the same outage for a region/
6. Outages that span a day will now include the day of the week in the spoken audio message. Without the day of the week spoken, it is not clear to the customer that we are advising the power will not be back "today".
7. Additional silence added at the end of the audio message to prevent users who hang up late from going directly to Contact Center. This will help reduce the number of customers who hear a busy signal during a large power outage.
8. You can now update the start time of an outage, which would be needed if it was decided to load a previous outage and you have the ability to indicate a "further update" will be provided at the time you have selected.
9. Number of customers show on each outage and is totaled on region screens.

### **Email**

1. Email Text is optimized for smart phone viewing, much less scrolling and information is consolidated
2. Only receive a single email for area and specific outage that is changing. This way you don't have to look at past emails to try and determine what has changed with an outage.

3. There is an email summary at the bottom of each message, allowing easy review of current scope of outage situation.
4. If there are no other outages for a region, when the last email is sent, it will indicate at the bottom of the email there are no further outages in the region.
5. Number of customers affected show on email.

## Web Site

1. Customer count is added to the create outage function. The number of customers on the feeder is shown for reference.
2. This count is used to drive outage size categories on the web map... There are 3 categories proposed: Less than 200, 201 – 100, and > 1000. If we have a large scale outage active, the map will show one single outage encompassing the full region.
3. Outages on the map are positioned based on the TML, SUB or Feeder selected.
4. Integration to the website will allow control over when to show a planned outage on the website
5. Large Scale Outages are clearly defined on the map.

## General

1. Error handling/status has been made easier. The status of the Outage message creation is shown directly on the Informer list screen. If a failure should occur, the error status shows directly on the Outage Map screen. Previously this is buried in a status log file and could be missed.
2. The client is now Browser based, requiring no physical installs. It uses latest software toolset and replaces the old technology currently in use. The interface will be very familiar to anyone who uses other NP applications... such as Switch, MES, etc... NOTE: Because it is browser based, users must make the distinction between closing the browser (shutting down the application) verses closes a window or screen.

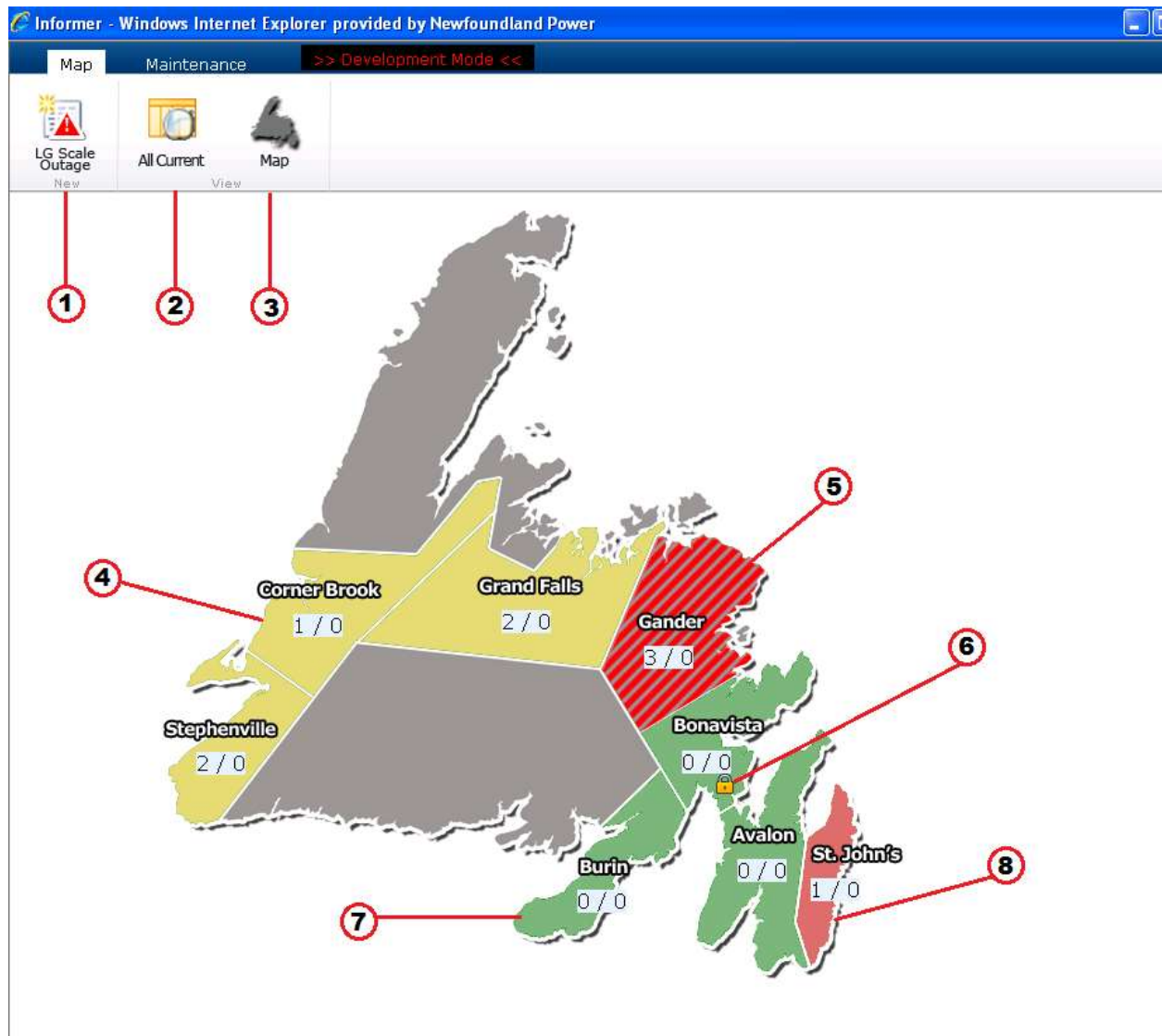
## Reporting

A new dash board is planned to be available that shows:

Feeder Name	Status	Cur Load	Normal Load	# Tickets	Audio Created
HWD-01	On	5.4 MW	5.4 MW	0	No, cust count
HWD-02	Off	0.0 MW	6.1 MW	22	Yes
HWD-03	On	4.6 MW	7.2 MW	10	Yes
HWD-04	On	6.4 MW	6.4 MW	0	No



## Application Images



Informa - Windows Internet Explorer provided by Newfoundland Power

5:5 Development Mode - <<

New Save Cancel Clear All Message Duration: 11.90 seconds 9

Bonavista Region 20 Expiring Expired

Current Outages (325 customers affected of 925)

Entity	Start	Restoration	Cause	Planned?	Status	Clear?
CAT02	1/29/2013 11:28:00 AM	1/29/2013 1:30:00 PM	System Problems	No	New	
200 of 495 ASTER AVENUE, MELROSE						
CLV03	1/29/2013 11:28:00 AM	1/29/2013 1:30:00 PM	Overhead line damage	No	New	
125 of 430 MANITOBA DRIVE						

10 11 12 13 14 15 16 17 18 19

Transmission Lines, Substations and Feeders for Bonavista Region + Show Locations

Type	Location
Region	ALL BONAVISTA AREA
Substation	BONAVISTA SUBSTATION
Feeder	BVA01
Feeder	BVA02
Feeder	BVA03
Substation	CATALINA SUBSTATION
Feeder	CAT01
Feeder	CAT03
Substation	CLARENVILLE SUBSTATION
Feeder	CLV01

21

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Map Maintenance >> Development Mode <<

Save Cancel

DOY01

☐ Planned? **22** **23** **24** **25** **26** **27**

Start Date/Time: 2013/01/22 09:07 AM

Restoration Date/Time: 2013/01/22 11:30 AM ☐ Extended? ☒ Include In Message?

**Locations:**

☐ Select All ☒ SOUTH BRANCH

☐ Unselect All ☐ CODROY **28**

☐ CODROY VALLEY

☐ DOYLES

☐ OREGANS

☐ SEARSTON

☐ ST. ANDREWS

**Cause of Outage:**

☒ Include In Message? **29**

☐ Under Investigation **30**

☐ Scheduled Maintenance

☐ Underfrequency Load Shedding

☐ Severe Weather Conditions

☐ Emergency Repairs

☐ Overhead line damage

☐ Underground cable damage

☐ Equipment failure

☐ Forest Fire

☐ Pole Fire

☐ Other Insulator Breakdown **31**

# of Customers Affected: 1000 # of Customers on Feeder: 1652

Notes: **32** **33** **34**

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Map Maintenance >> Development Mode <<

New Save Cancel Clear All Message Duration: 11.896 seconds Preview Message

Stephenville Region Expiring Expired

Current Outages

Entity	Start	Restoration	Cause	Planned?	Status	Clear?
<a href="#">GAL01</a>	1/22/2013 9:09:00 AM	1/22/2013 2:00:00 PM	Emergency Repairs	No	New	
ST. CLARE AVENUE						

46

Message Preview and Upload

45 Upload Cancel Message Duration: 25.302 seconds

Stephenville

47

Transmission Lines, Subs Stephenville Region

Type	
Region	AL
Transmission	40
Transmission	407L
Substation	ABRAHAMS COVE SUBSTATION
Feeder	ABC01
Feeder	ABC02
Substation	BERRY HEAD SUBSTATION
Feeder	BHD01
Substation	DOYLES SUBSTATION
Feeder	DOY01
Substation	GALLANT STREET SUBSTATION
Feeder	GAL03

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Map Maintenance >> Development Mode <<

Save Cancel Commit

41 40 35

### Large Scale Outage

☐ System Wide ☐ Under Frequency ☒ Manual

36

Start Date/Time: 2013/01/29 11:31 AM

Restoration Date/Time: 2013/01/29 02:00 PM ☐ Include Further Update?

**Locations:**

☐ Select All ☐ Unselect All

☐ St John's ☐ Avalon ☐ Burin ☐ Bonavista ☐ Grand Falls ☐ Corner Brook ☐ Stephenville

37

**Cause of Outage:**

☐ Under Investigation ☐ Scheduled Maintenance ☐ System Problems ☐ Severe Weather Conditions ☐ Emergency Repairs ☐ Overhead line damage ☐ Underground cable damage ☐ Equipment failure ☐ Forest Fire ☐ Pole Fire ☐ Other

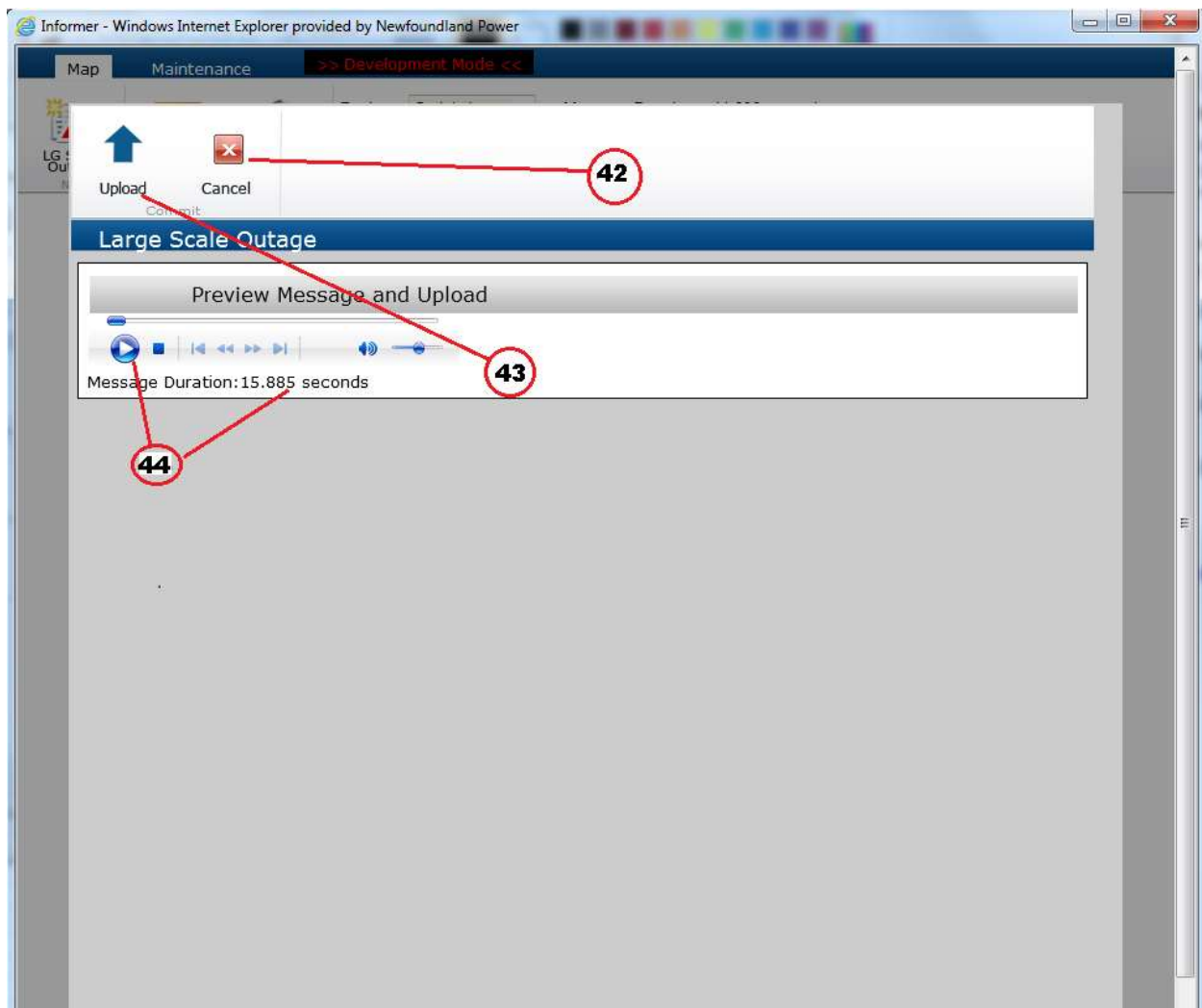
38

Insulator Breakdown

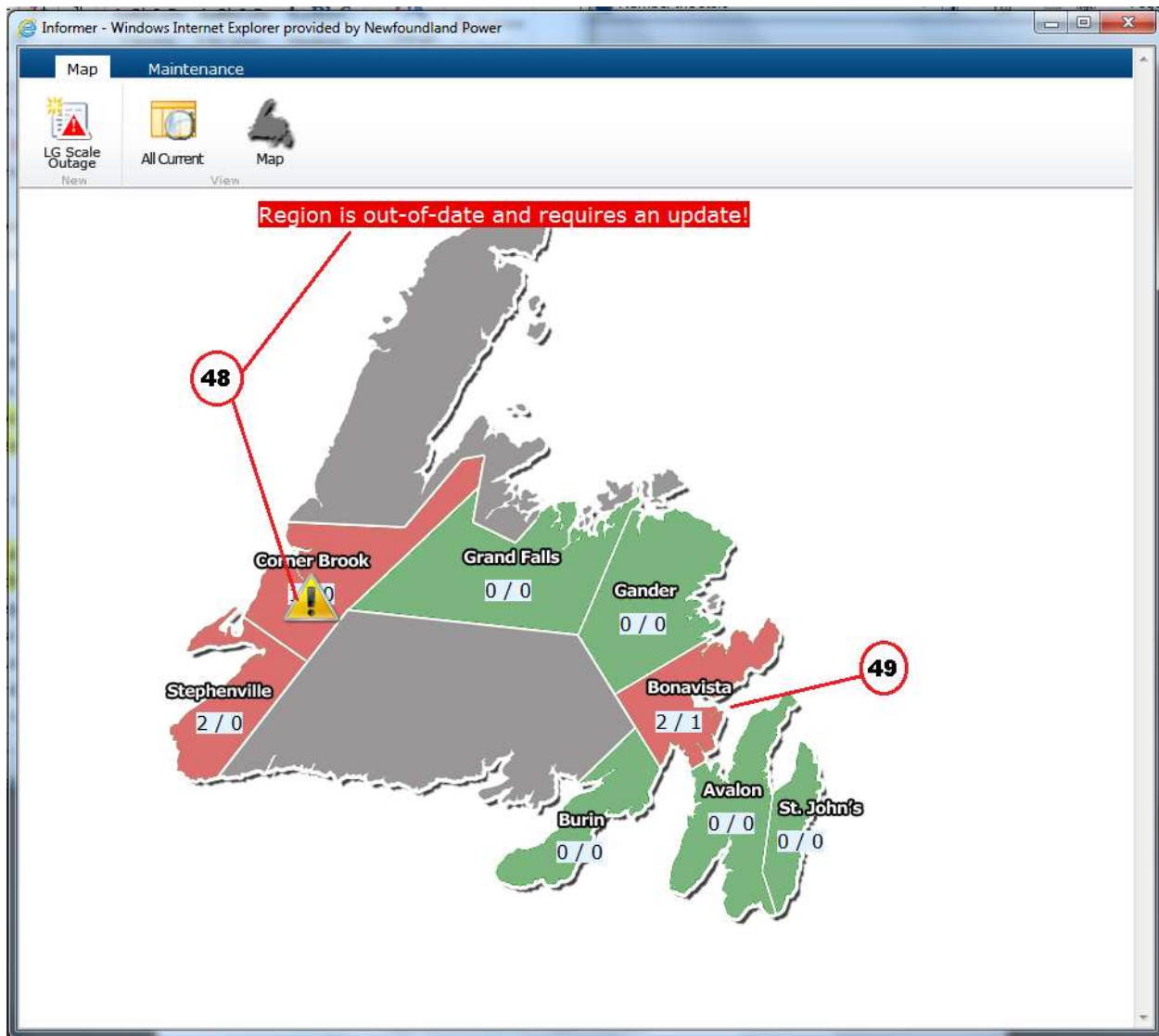
Manual Message:  Duration: 0:00

39

Notes:







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New Save Cancel Clear All Message Duration: 11.90 seconds Preview Message

**St. John's Region (Read-Only Mode)** Expiring Expired

Outages cannot be changed at this time

User 'fflynn' has region locked since '2013/02/02 11:16'

There Are No Current Outages For This Region

**Transmission Lines, Substations and Feeders for St. John's Region** + Show Locations

Type	Location
Region	ALL ST. JOHN'S REGION
Substation	BROAD COVE SUBSTATION
Feeder	BCV01
Feeder	BCV02
Feeder	BCV03
Feeder	BCV04
Substation	BIG POND SUBSTATION
Feeder	BIG02
Substation	CAPE BROYLE SUBSTATION
Feeder	CAB01
Substation	CHAMBERLAINS SUBSTATION
Feeder	CHA01
Feeder	CHA02
Feeder	CHA03

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Map Maintenance

System Settings Audio Files Causes Time Interallia Entries Locations Receivers Log Review Unlock Regions

### Unlock Regions









Region	Locked?	Locked Timestamp	Locked By User	
St John's	<input checked="" type="checkbox"/>	2/2/2013 11:16:14 AM	fflynn	
Avalon	<input type="checkbox"/>	2/2/2013 10:53:11 AM	fflynn	
Burin	<input type="checkbox"/>	2/2/2013 10:53:18 AM	fflynn	
Bonavista	<input type="checkbox"/>	2/2/2013 10:34:28 AM	fflynn	
Gander	<input type="checkbox"/>	2/2/2013 10:34:28 AM	fflynn	
Grand Falls	<input type="checkbox"/>	2/2/2013 10:34:28 AM	fflynn	
Corner Brook	<input type="checkbox"/>	2/2/2013 10:34:28 AM	fflynn	
Stephenville	<input type="checkbox"/>	2/2/2013 11:09:59 AM	fflynn	

Diagram annotations: Red lines connect the 'St John's' region name to a circle labeled 51, the 'Locked?' column header to a circle labeled 51, the 'Locked Timestamp' column header to a circle labeled 51, the 'Locked By User' column header to a circle labeled 52, and the 'Unlock Regions' menu item to a circle labeled 50.