## Outage Management Business Requirements

[Company Logo]

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## OUTAGE MANAGEMENT PROJECT REQUIREMENTS

The following document is a business requirements document that provides a model of the features needed for a new software application. This application will replace current outage management applications. Due to confidentiality, some content including logos, workflow diagrams, figures, and tables have been removed. The company's name has also been removed.

## Project Scope

The scope of this project is to replace and integrate the current outage management applications iTIRS and iTOA with a new application. The future application will allow users to (a) schedule outages, (b) create and issue switching orders, (c) create clearance/hold/recloser orders, (d) enter log entries through automation and manual processes, and (e) generate outage reports based on outage time entered into the application.

## Business Requirements

Business requirements are the objectives and outcomes the company wants to accomplish.
Business requirements contain:

- Business Requirements
- Detailed Description
- Priority
- Notes

The title and reference id are essential in drafting business requirements. When typing the business requirement always start with the reference id first, followed by the title. The reference id is abbreviated as BR. Detailed Descriptions are a detailed description of the requirement(s). Priority is determined by rank and based on the topic's importance. There are five priority requirements utilized: critical, high, medium, low, and future. See table $\mathbf{1}$ for a description of the priority requirements. The notes section contains any notes for stakeholders, delivery team, or partners. This helps the reader to understand the desired outcome.

| Table 1. Priority Requirements Description |  |
| :--- | :--- |
| Critical | Critical level requirements are critical to the success of the project. The project will not be <br> possible without them. |
| High | High level requirements must be implemented to ensure that it meets the project's scope. |
| Medium | Medium level requirements provide some value, but the project can proceed without it. |
| Low | Low priority requirements consist of "nice to have" features that are implemented when <br> time and cost allows it. |
| Future | Future requirements are considered out-of-scope and have been included for possible <br> future releases. |

NOTE: The numbers after the underscore represent each requirement created and are in sequential order.

The following table consists of the business requirements needed for accomplishing the project scope.

| Business Requirement | Detailed Description | Priority | Notes |
| :--- | :--- | :--- | :--- |
| BR_001 <br> Application <br> Navigation | Users shall be capable of navigating the <br> application. The application shall be <br> user friendly and intuitive. <br> Furthermore, it must also contain auto <br> saving features. | High |  |
| BR_002 <br> Application <br> Performance | The application shall respond to <br> commands with a wait time of no more <br> than 3 seconds. The program shall be <br> configurated to recognize issues as <br> soon as they happen. Automatic <br> notifications will be sent to IT support <br> personnel and supervisors. | High |  |
| BR_003 <br> User Access and <br> Profiles | Users will request access to the <br> application through the company's <br> program called Personal Access <br> Manager (PAM). | High |  |
| BR_004 <br> User Roles | The application will store information <br> such as user types and roles. <br> Administrator's will have the ability to <br> configure users access to certain <br> functions and features. | High |  |


| BR_005 <br> User Dashboard | The application will include an <br> interactive dashboard that is <br> configurable based on the user's role. <br> The user will have the option to <br> customize their dashboards with <br> functions that pertain to their roles. | High |  |
| :--- | :--- | :--- | :--- |
| BR_006 <br> User Settings | The application shall recognize user <br> settings every time the user logs into <br> the application. These settings may <br> include areas of responsibility, districts, <br> queries, etc. User settings shall be <br> changeable when the user relocates to <br> another area or desk. | High |  |
| BR_007 <br> Data Tables | The application shall respond to API <br> programs. This will allow the <br> application's database to access and <br> exchange prevalent information and <br> records. | High |  |
| BR_008.1 <br> TMS Model | The application shall interface with the <br> TMS model (CIM format) for selecting <br> equipment when scheduling outages, <br> creating switching and CHR orders, and <br> generating outage reports. In addition, <br> the application shall facilitate and <br> monitor the correspondence of main <br> devices (e.g., lines, line sections, <br> breakers, transformers, etc.) and any <br> associated equipment. | High |  |
| Users will be capable of manually <br> entering future equipment into the <br> application. This will only apply to <br> present requests and within the TMS <br> model. | High |  |  |
| BR_008.2 <br> TMS Model | The application shall be configurable in <br> setting flags for equipment and <br> conditions. | High |  |
| BR_010 <br> Configurable Flags/ <br> Condition Flags/ <br> Menus | Selectable | The application will consist of multiple <br> displays and tabs that serve different <br> functions. Displays will contain data <br> fields, dropdown menus, | High |
| BR_009.2 <br> Configurable Flags/ <br> Condition Flags/ <br> Equipment | The application shall not modify any <br> equipment attributes on work requests <br> that are in certain states. | High |  |


|  | calendar/clock selections, radio <br> buttons, etc. Fields will be further <br> defined when modifications are <br> required. |  |  |
| :--- | :--- | :--- | :--- |
| BR_011 <br> Outage Request <br> States | The application will support work <br> requests in various work status. This <br> shall be configurable by the company's <br> administrators. | High |  |
| BR_012.1 <br> ERCOT Interface | The application shall be capable of <br> interfacing with ERCOT's Outage <br> Scheduler. A separate display will be <br> utilized for completing all ERCOT <br> information. | High |  |
| BR_012.2 <br> ERCOT Interface | The application must support outage <br> requests that are submitted outside of <br> the application to ERCOT. | High |  |
| BR_013.1 <br> Notification Rules | The application shall have the <br> capability of establishing notification <br> rules. | High |  |
| BR_013.2 <br> Notification Rules | The application shall send notifications <br> from administrators. Notifications will <br> be configured based on schedule <br> changes, equipment/equipment flag <br> changes, and changes to typology <br> processors. | High |  |
| The application shall use logic to <br> configure notifications when necessary. | High |  |  |
| BR_017.1 <br> Switching Orders <br> Notification Rules | The application will create an audit trail <br> of all work request activities. | High |  |
| BR_014 <br> Audit Trail | The application shall be configurable <br> for users to select the type of outage <br> and request. | High |  |
| BR_015 <br> Outage and Request <br> Types | The application will be capable of <br> switching orders while executing other <br> switching orders. | High |  |
| BR_016 <br> Submission Rules outage request submission <br> rules. The submitter will receive a <br> notification when a submitted outage <br> request does not follow the submission <br> rules. | High |  |  |


| BR_017.2 <br> Switching Orders: <br> Process | The process for switching orders will be <br> independent from the work request <br> process. | High |  |
| :--- | :--- | :--- | :--- |
| BR_018 <br> Clearance, Hold, and <br> Recloser (CHR) Orders | The application shall allow <br> administrators to establish a process <br> for issuing, releasing, and managing <br> CHR orders. | High |  |
| BR_019 <br> Switching Validation <br> Logic | The application shall validate all CHRs <br> that have been released prior to <br> placing devices back into service. | High |  |
| BR_020 <br> Relating Work <br> Requests to CHRs | The application shall be configurable in <br> relating work requests and CHR orders <br> to common devices. | High |  |
| BR_021 <br> Summary Pages | The application shall allow users to <br> create and save multiple summary <br> pages with different filters from <br> queries. | High |  |
| BR_022 <br> Logging Capabilities | The application shall contain event, <br> switching, and operator logs. | High |  |
| BR_023.1 <br> Outage Reports | The application shall use outage <br> information (e.g., equipment, date, <br> time, etc.) to create daily outage <br> reports, planned reports, and <br> unplanned reports. Reports will be <br> emailed periodically to select <br> recipients. | High |  |
| BR_023.2 <br> Outage Reports | The application shall be capable of <br> generating reports from data tables. | High |  |

## Functional Requirements

Functional requirements are a detailed description of the solutions for fulfilling the business requirements. These requirements consist of the functional requirements, detailed descriptions, priority, and notes. The reference id is abbreviated as FR. The following table consists of the functional requirements needed for accomplishing the project scope.

| Functional <br> Requirement | Detailed Description | Priority | Notes |
| :--- | :--- | :--- | :--- |
| FR_001.1 <br> Application <br> Navigation | The application will be built to function as a <br> web application and be compatible with <br> Google Chrome and Mozilla Firefox. | High |  |
| FR_001.2 <br> Application <br> Navigation | The application shall navigate in the same <br> manner as Windows based applications. The <br> application shall have the capability to <br> copy/paste, toggle forward and backward, <br> print, zoom in and out, and respond to <br> keyboard commands. | High |  |
| FR_001.3 <br> Application <br> Navigation | Users shall have the ability to filter, sort, and <br> search through information within a <br> summary page. | High |  |
| FR_001.4 <br> Application <br> Navigation | The application will allow more than one <br> summary page to be opened at the same <br> time. | High |  |
| FR_001.5 <br> Application <br> Navigation | Users shall have the ability to navigate <br> between pages, execute commands, create <br> documents, and make log entries. This will <br> be accomplished with minimal keystrokes <br> and mouse clicks. | High |  |
| FR_001.6 <br> Application <br> Navigation | The application shall send a warning <br> message that alerts users to save their work <br> before moving on to another page or tab. | High |  |
| FR_001.7 <br> Application <br> Navigation | Within each page, fields will be utilized for <br> entering data by using check boxes, radio <br> buttons, dropdown menus, calendar/clock <br> icons, and manual entry. Designated fields <br> will be configurable when required. | High |  |


| FR_001.8 <br> Application <br> Navigation | The application will contain the following <br> pages and tabs: <br> - Main <br> - Task <br> - Switching Orders <br> - Work Requests <br> - Engineering <br> - Audit Trails <br> - Emails | High |  |
| :--- | :--- | :--- | :--- |
|  | The remaining can be found in table 2 in the <br> appendix page. |  |  |
| FR_001.9 <br> Application <br> Navigation | A lock feature will be activated when a work <br> request, switching order, and or CHR is in <br> edit mode. Other users will not be permitted <br> to make changes. A pop-up will appear when <br> another user tries to make edits. | High |  |
| FR_002.1 <br> Application <br> Performance | The application will be capable of <br> responding to commands with minimal wait <br> times (3 seconds or less). In addition, search, <br> retrieve, and process data from an issued <br> company laptop. | High |  |
| FR_002.2 <br> Application <br> Performance | Through self-monitoring, the application will <br> stay apprised of its health status. If issues <br> occur, a text message or email will be sent to <br> the appropriate users and support <br> personnel. | High |  |
| FR_002.3 <br> Application <br> Performance | The application will contain redundant <br> servers. Redundancy will be monitored by a <br> watchdog timer. Select users will receive <br> notifications of the average execution time, <br> the health of the processor, lack of ERCOT <br> updates, etc. All TGO personnel will be able <br> to view this information in real-time. | High |  |
| FR_003.1 <br> User Access and <br> Profiles | Access to the application shall be granted <br> from a request made in PAM. An <br> administrator will coordinate with IT to set <br> the approval requirements for all user roles. <br> After approval, a user profile will be created <br> with corporate data such as RACFID, email, <br> phone, job title, etc. This data will be auto <br> populated into the user's profile. | High |  |


| FR_003.2 <br> User Access and <br> Profiles | All users will be capable of updating their <br> user information. Coordinators and control <br> room personnel will be given permission to <br> change field user information. Changes to <br> user roles will only be allowed by submitting <br> a request in PAM. | High |  |
| :--- | :--- | :--- | :--- |
| FR_004.1 <br> User Roles | The application shall support various <br> employee user roles. | High |  |
| FR_004.2 <br> User Roles | Based on the user's role(s), users will have <br> access to certain functions and features. This <br> will be configurable by administrators. | High |  |
| FR_004.3 <br> User Roles | All users will have the ability to view, print <br> export, create, and save the following: <br> - Summary Pages | High |  |
| FR_Logs <br> - Switching Orders <br> - CHR Orders | All user dashboards will initially be set to a <br> Standard default layout. All default layouts <br> shall be configurable by administrators. | High |  |
| FR_005.2 <br> User Dashboard | Users will have the option to customize their <br> dashboards with designated outage <br> summaries, widgets, tools, and functions. | High |  |
| FR_005.3 <br> User Dashboard | Users shall have the ability to search and <br> select pre-defined filters and queries within <br> their user dashboard. | High |  |
| FR_005.4 <br> User Dashboard | All user dashboards will contain a <br> notification box that will list all notifications. | High |  |
| FR_006.1 <br> User Settings | The application shall recognize each user's <br> login information. User display setup will be <br> saved and uploaded upon login. | High |  |
| FR_006.2 <br> User Settings | The application shall have a save feature for <br> any changes that are made within the user <br> settings. | High |  |
| FR_006.3 <br> User Settings | When a user issues or releases a CHR order, <br> their name will auto populate into the <br> appropriate fields. | High |  |
| Usernames will be recorded and captured <br> when changes are made within the <br> application. | High |  |  |


| FR_007 <br> Data Tables | The application's data shall be accessed <br> through APIs. Users will only be able to view <br> the data in read-only mode. Unless <br> changes are needed, the data shall remain <br> accessible in read-only mode. | Med |  |
| :--- | :--- | :--- | :--- |
| FR_008.1 <br> TMS Model | The application shall process a new TMS <br> model (CIM format) and any other data <br> repositories. Changes will be done manually <br> and periodically. | High |  |
| FR_008.2 <br> TMS Model | The application shall allow users to manually <br> enter stations and equipment that do not <br> exist in the TMS model. | High |  |
| FR_008.3 <br> TMS Model | No equipment shall be modified if they are <br> present in active switching and CHR orders. <br> This will be documented in an exceptions <br> report. | High |  |
| FR_008.4 <br> TMS Model | Stations cannot be renamed or deactivated <br> when the station's equipment is in an active <br> switching or CHR order. | High |  |
| FR_009.1 <br> Configurable Flags/ <br> Condition Flags/ <br> Equipment | For each flag condition, the application will <br> configure warnings, prompts, and <br> notifications. Flags will be configurable by <br> authorized users. Current flags will be added <br> to the new application. | High |  |
| FR_009.2 <br> Configurable Flags/ <br> Condition Flags/ <br> Equipment | The application shall prevent modifications <br> of equipment attributes. This will only apply <br> to work requests that are in the active, <br> decline and complete states. | High |  |
| FR_009.3 <br> Configurable Flags/ <br> Condition Flags/ <br> Equipment | Coordinators will receive an email when <br> changes are made on equipment flags that <br> are in the received, approved, and ready <br> states. Notifications will also be displayed in <br> their dashboards. | High |  |
| FR_010.1 <br> Displays \& Selectable <br> Menus: Pages/Tabs | As work requests are submitted and <br> continued through various processes, <br> additional tabs and pages will be used to <br> perform other functions related to the work <br> request. Pages and tabs shall be easily <br> accessible. | High |  |


| FR_010.2 <br> Displays \& Selectable <br> Menus: Request <br> Entry Page/Tab | The application will require a request entry page and tab. This will be the starting point for completing a work request. The display page will include fields that require data to be entered before it can be submitted. The user will have the capability to save and continue later. | High |  |
| :---: | :---: | :---: | :---: |
| FR_010.3 <br> Displays \& Selectable <br> Menus: Request <br> Entry Page/Tab | The work request entry page shall be comprised of check boxes, radio buttons, calendar date and time selections, and dropdown menus for completing a work request. Once the request has been saved, it is assigned a state that is automatically updated throughout the work request process. Upon submitting the work request, the application will return the user back to the main page with a status update. | High |  |
| FR_010.4 <br> Displays \& Selectable <br> Menus: Main Page | The main page will display all information pertaining to a created work request. The page will consist of data entry fields that will be populated by various methods. See table $\mathbf{2}$ in the appendix page for a list of all fields. | High |  |
| FR_010.5 <br> Displays \& Selectable <br> Menus: Task Page | The task page will comprise of a list of tasks that must be completed before a work request state can be changed. Multiple groups and users will have the ability to develop tasks in each state. Users with administrator permissions will have the ability to create, add, or update tasks. | High |  |
| FR_010.6 <br> Displays \& Selectable <br> Menus: Task Page | The application shall be configurable for tasks to be created for different requests, outages, and equipment types. Each task will be selected from a check box or radio button to indicate that the task has been completed. | High |  |
| FR_010.7 <br> Displays \& Selectable <br> Menus: Attachment <br> Page | The application will allow users to add attachments by dragging and dropping files or adding a link as an attachment. | High |  |
| FR_010.8 <br> Displays \& Selectable <br> Menus: Audit Trail Page | The audit trail page will contain all past and current audit trails. Audit trails will be automated for multiple processes such as work requests, approvals, cancellations, and declines. For an extensive list of audit trail capabilities see table $\mathbf{2}$ in the appendix page. | High |  |


| FR_010.9 <br> Displays \& Selectable <br> Menus: Email <br> Page/Tab | The application shall contain an email page and tab that allows users to view email requests, switching orders, CHR orders, and attachments to recipients. Email distribution lists will be housed within the database and selectable from a dropdown menu with type and filter search features. | High |  |
| :---: | :---: | :---: | :---: |
| FR_011.1 <br> Outage Work <br> Request States | The application shall be configurable in supporting work requests in various states. <br> The current work request states are: <br> - Create <br> - Cancel <br> - Revise <br> - Active <br> - Complete <br> - Extend | High |  |
| FR_011.2 <br> Outage Work <br> Request States: <br> Changing States | Work requests transition through various state changes. Each state will define where the work request is in the process. Work requests and their work state shall be displayed within a user's dashboard. | High |  |
| FR_012 <br> ERCOT Interface | The application will be capable of interfacing with ERCOT's Outage Scheduler (OS). After a work or extension request has been submitted and reviewed by the outage coordination or control room team, the requests will then be submitted through the ERCOT OS for final approval. This process will be done through the ERCOT page. Each request will be under ERCOT work request states. <br> The ERCOT statuses are the following: <br> - Submitted to ERCOT <br> - Received by ERCOT <br> - Rejected <br> - Canceled <br> - Approved <br> - Declined <br> - Withdrawn | High |  |


| FR_013.1 Notification Rules | The application shall send email notifications based on defined rule sets. A user with administrator permissions will have the ability to set-up notifications, select saved email groups, and generate emails without manually entering each contact. Emails will be sent to individuals, groups, and email distribution lists. A log of all email notifications will be saved. | High |  |
| :---: | :---: | :---: | :---: |
| FR_013.2 Notification Rules | The application will generate email notifications to the appropriate group(s) when there are changes in work request states. Administrators will have the ability to configure email notifications. | High |  |
| FR_014 <br> Audit Trail | The application shall be capable of logging and auditing all changes to CHR orders, outage requests, ERCOT outage requests, and switching orders. Access to these logs will only be available in read-only mode. | High |  |
| FR_015 <br> Outage and Request Types | The application shall be configurable for users to select or enter the request type. Currently, the company utilizes the following request types: <br> - Recloser <br> - Clearance <br> - Hold <br> - Trip Testing Info <br> - No Hold, Sw \& Tag Required <br> - No Hold, No Sw \& Tag Required <br> - Stay Normal <br> - RTU/Comm <br> - Relay | High |  |
| $\begin{aligned} & \text { FR_016 } \\ & \text { Submission Rules } \end{aligned}$ | The application shall be configurable in sending warning notifications and halting requests when certain conditions are not met. Not submitting the request type, equipment flag(s), dates/times, etc. will prevent the application from submitting requests. | High |  |
| $\begin{aligned} & \hline \text { FR_017.1 } \\ & \text { Switching Orders } \end{aligned}$ | The process for generating switching orders shall be independent from the process of generating work requests. Associated data will be added to the switching order. | High |  |


| FR_017.2 Switching Orders | Switching orders will be generated from templates imported from the generic switching database. Data from copied and submitted work requests shall also be used in creating switching orders. | High |  |
| :---: | :---: | :---: | :---: |
| FR_017.3 <br> Switching Orders | The switching order page will consist of data fields that will be populated using dropdown menus, free entry, calendar, clock, radio buttons and check boxes. Each field will be configurable in how data is entered and determining what information is needed. | High |  |
| FR_017.4 Switching Orders | Switching orders shall be locked when they are being created, revised, or issued. This is to prevent multiple users from making edits at the same time. | High |  |
| FR_018.1 <br> Clearance, Hold, and Recloser (CHR) Orders | The application shall give the user the ability to create and issue CHR orders. Equipment devices shall be auto populated from created and revised work requests. A process for adding and deleting equipment devices must be included. | High |  |
| FR_018.2 <br> Clearance, Hold, and <br> Recloser (CHR) <br> Orders | Clearance/Hold/Recloser (CHR) orders shall validate opened and tagged devices based upon $S \& T$ order dates and times. If the validation is unsuccessful, the user will be prevented from completing the order and will receive a warning message. | High |  |
| FR_018.3 <br> Clearance, Hold, and <br> Recloser (CHR) <br> Orders | The application shall populate CHRs with specific verbiage designated by the company. This will allow CHR orders to be issued directly. CHR device points will also be auto populated from a work request but will have the option to be edited. Each hold order that is written shall populate with a request number and a second identifier. | High |  |
| FR_018.4 <br> Clearance, Hold, and <br> Recloser (CHR) <br> Orders | The application will prevent issuing CHR orders until all associated switching is complete. Validation will be based on location, device position, proper tag placement, and the switching orders execution date and time. | High |  |


| FR_018.5 <br> Clearance, Hold, and <br> Recloser (CHR) <br> Orders | The application will prevent the user from <br> returning to a switching order until all CHR <br> orders have been released (including any <br> other requests). Validation will be based on <br> location, device position, and the tags <br> removed from isolation devices. The user <br> will click the vali idation button to <br> initiate execution by its date and time. | High |  |
| :--- | :--- | :--- | :--- |
| FR_019.1 <br> Switching Validation <br> Logic | The application shall be capable of running <br> validations before issuing CHR orders and <br> closing switch orders. All listed devices shall <br> be properly switched, tagged, and turned <br> off. | High |  |
| FR_019.2 <br> Switching Validation <br> Logic | The application shall possess a validation <br> button for both switching order and CHR <br> displays. To run the validation, it will utilize <br> clearing/closing switching order dates and <br> times, CHR issued and released dates and <br> times, switching tags, and device tags found <br> within TMS. | High |  |
| FR_019.3 <br> Switching Validation <br> Logic | The application will be configurable in <br> issuing warning messages to users when <br> certain criteria(s) are not met. The program <br> shall also be capable of accurately overriding <br> false warning messages that are sent. | High |  |
| FR_020.1 <br> Relating Work <br> Requests to CHRs | The application shall be capable of detecting <br> the same device(s) in work requests and CHR <br> orders. A field box will display the related <br> devices. | High |  |
| FR_020.2 <br> Relating Work <br> Requests to CHRs | The application will be capable of manually <br> searching related work requests and CHRs. <br> To search for related work requests and <br> CHRs, the user will need to enter the work <br> request number, station name, and device <br> name and number. | High |  |
| FR_020.3 <br> Relating Work <br> Requests to CHRs | When a work request or CHR order is <br> completed or released, the application shall <br> automatically prevent the linking of other <br> work requests and CHRs orders. | High |  |


| FR_021.1 <br> Summary Displays | The application will possess multiple summary pages. The initial summary displays required are Outage request, CHR, Ready and Active, Past Due, Archived, and Calendar View. The user will have the ability to add or remove summary display columns. In addition, adjust the columns width and height. | High | At any point in time, the application will be updated to meet the company's needs. |
| :---: | :---: | :---: | :---: |
| FR_021.2 <br> Summary Displays | Summary displays will contain links to work requests, switching orders, and CHR orders. Furthermore, they shall be exportable into Excel or generated as a PDF file. | High |  |
| FR_022 <br> Logging Capabilities | The application will include an operator, event, and switching log used for documenting. This should seamlessly respond to creating or editing log entries. The application should not take more than 3 seconds to respond to commands or search and filter request. | High |  |
| FR_023.1 <br> Outage Reports | The previous day follows a timeframe of 00:00-23:59 or 12:00a-11:59p. This report shall be formatted as an HTML file and emailed daily to authorized users. | High |  |
| FR_023.2 <br> Outage Reports | Report templates will be uploaded as separate documents. | High |  |
| FR_023.3 <br> Outage Reports: Ad Hoc | The application shall give users the ability to create customized reports. Custom reports must include the following: <br> - Date Range <br> - Outage Type <br> - Equipment Description <br> - Work Center <br> - Region <br> - Cause Codes <br> The interface should be similar to Microsoft Power BI. | High |  |
| FR_023.4 <br> Outage Reports: Ad Hoc (Email Capabilities) | The application will automatically send adhoc reports to designated users and personnel. | High |  |


| FR_023.5 Outage Reports: High Voltage Breaker | The High Voltage Breaker report captures the previous day's extra-high voltage and high-voltage breaker operations. | High |  |
| :---: | :---: | :---: | :---: |
| FR_023.6 <br> Outage Reports: All Breaker Operations | The All-Breaker Operations report captures the previous day's extra-high voltage, highvoltage, and low-voltage breaker operations. The previous day follows the same timeframe mentioned in the High Voltage Breaker report. This report shall be formatted as an HTML file and emailed daily to authorized users. The current structure of the report shall be transferred over into the new application. | High |  |
| FR_023.7 <br> Outage Reports: <br>  <br> Emergency Outages | The Unplanned \& Emergency Outages report captures the previous day's station and line outages. Outage type codes are used in completing this report. The outage type codes utilized are permanent, temporary, deferred, emergency, and momentary. Outage type codes shall be configurable by company administrators. | High |  |
| FR_023.8 Outage Reports: AllLine Outages | The All-Line Outage report captures the previous day's line outages. Permanent outages, relay fault distance, actual fault distance, and the structure of the event are reported. The previous day follows the same timeframe mentioned in the High Voltage Breaker report. This report shall be formatted as an HTML file and emailed daily to authorized users. | High |  |
| FR_023.9 Outage Reports: NERC TADS | The company must meet NERC's regulatory requirements when reporting NERC TADS. The application shall generate on-demand reports based on NERC's criteria. <br> Transmission standard users shall be responsible for outlining these requirements. | High |  |
| FR_023.10 Outage Reports: NERC Line Inventory | The company must meet NERC's regulatory requirements when reporting line inventory. The application shall generate on-demand reports based on NERC's criteria. | High |  |


| FR_023.11 <br> Outage Reports: <br> NERC Line Inventory | Transmission standard users shall be <br> responsible for outlining NERC TADS <br> reporting requirements. Due to their <br> methodologies of creating lines, the <br> coordination between MAXIMO and TMS is <br> crucial. | High |  |
| :--- | :--- | :--- | :--- |
| FR_023.12 <br> Outage Reports: <br> NERC Station <br> Inventory | The company must meet NERC's regulatory <br> requirements when reporting station <br> inventory. The application shall generate on- <br> demand reports based on NERC's criteria. <br> Transmission standard users shall be <br> responsible for outlining NERC reporting <br> requirements. | High |  |
| FR_023.13 <br> Outage Reports: <br> NATF Line Inventory | The application shall allow transmission <br> standard users to generate on-demand <br> reports based on requirements from the <br> North American Transmission Forum (NATF). <br> The NATF is not a regulatory body; it is a <br> cross-utility forum that the company utilizes <br> for benchmarking. This report shall consist of <br> transmission line inventory requirements <br> outlined in the NATF Line Inventory report <br> template. | High |  |
| The application shall allow transmission <br> standard users to generate an on-demand <br> report based on requirements from NATF. <br> The NATF is not a regulatory body; it is a <br> cross-utility forum that the company utilizes <br> for benchmarking. This report shall consist of <br> station inventory requirements outlined in <br> the NATF Station Inventory report template. | High |  |  |
| FR_023.14 <br> Outage Reports: <br> NATF Station <br> Inventory | The application shall import data files, assist <br> with data verification and cleanup. This <br> process will be similar to the OTIS - LCRP <br> module import function. | High |  |
| FR_023.15 <br> Outage Reports: <br> Importing | Users will have the ability to export reports <br> as a PDF, XML, CSV, and or XSLS file. | High |  |
| FR_023.16 <br> Outage Reports: <br> Exporting |  |  |  |

## Technical (Non-Functional) Requirements

Technical Requirements are the solutions for addressing systems, infrastructure, and the architectural aspects for meeting functional and business requirements. They may include performance, physical/virtual sizing, network bandwidth, reliability, and availability. For technical (non-functional) requirements, the reference id is abbreviated as TR. The following table consists of the technical requirements needed for accomplishing the project scope.

| Technical Requirement | Detailed Description | Priority | Notes |
| :--- | :--- | :--- | :--- |
| N/A | N/A | N/A | N/A |

## Out-of-Scope

Out-of-Scope is any information, policy, and or idea that reaches beyond any requirements from the SMEs. The Out-of-Scope section contains the Out-of-Scope Reference ID and Description. The abbreviation for this section is OOS. The following table consists of information that is outside of the project's objective(s).

| Out of Scope Reference ID | Description |
| :--- | :--- |
| OOS_001 Application Navigation | There shall be an app version that is suitable for both <br> tablets and phones. The app should perform in the <br> same manner as the PC version. |
| OOS_002 User Settings | Users shall have the option to designate orders issued <br> to or released by external TOPs. This would populate <br> the company's controller via user information. |

## Assumptions \& Constraints

Assumptions are any information that is known and deemed intuitive. Constraints are defined as any information that is bound by certain criteria and or restrictions. Assumptions \& Constraints contain the Assumption \& Constraints Reference ID, Assumption \& Constraints, and Description. The reference id for this section is abbreviated as AC. The following table consists of any assumption and or constraints that affect the business requirements.

| Assumption \& Constraints <br> Reference ID | Assumption \& Constraints | Description |
| :--- | :--- | :--- |
| N/A | N/A | N/A |

## APPENDIX

## Workflow Diagram's

The following has been removed due to confidentiality.

## Table 2

The following has been removed due to confidentiality.

| Revision History |  |  |
| :---: | :---: | :---: |
| Implemented By | Date | Change Description |
| Sade Ariyibi | Aug. 2022 | - |
|  |  |  |

