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TOGA – Background and Functions

Background information on philosophies and
principals of TOGA.

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Document Issue Record

Version	Date	Comments
1.0 draft	28th Nov 2006	Initial

TOGA - Background

Introduction

TOGA (Transmission Outages, Generation Availability) is National Grid's facility to enable it to manage the Grid Code OC2 data requirements and Transmission Access information. It is web based and can be accessed externally by generators, DNO's and Scottish Transmission Owners (TO). It was introduced in 2005 to allow National Grid to meet it's obligations under BETTA.

The application is web based with three area's:

TOPAM	Managing Transmission access
GOAMP	Managing the OC2 submissions by generators
Admin	Managing the users access rights and privileges

TOPAM is part of the new TOGA application, which also includes the processes and data to manage the Grid Code OC2 requirements of data exchange with generators for availability and generation outages. It will make use of some of this data by allowing direct viewing of generation outage data and the ability to link a generation outage to a transmission outage. It provides Transmission Requirements Users with the ability to enter data view requests and pending outages as well as planned outages and run reports to enable planning of the Transmission System.

These notes are all about what the application can do and how it is set up. It does not cover how these processes features are actually implemented and used. See the separate training notes and live help pages for this information.

Background to TOPAM

Security and access and User Types

TOGA has a fairly complex security functions with the ability to create a roles from a pick list of options, ensuring users only see the data necessary for their role. This is particularly important as TOGA is externally accessible by TO's DNO's and Generators. TOGA also stores confidential information. Users are divided into five types:
- SO users who potentially can see all data
- TO users who see a smaller set of data
- Generator users – Company level who can see outages that affect all Power Stations that they own
- Generator users – Power Station level who can see outages that affect their Power Station.
- DNO User who see all outages that affect their DNO

The first two are know as internal users and the last three as external users.

Data Structure

The main tables in TOGA are associated with Basic Data, the building blocks for creating outage templates know as basic outages. Planned outages associated with the managing of the outage plan and request outages, associated with the process of

changing the plan There are also links to GOAMP data that are used by TOPAM including DNO's and Power Stations that give TOPAM the external party codes.

In TOGA (TOPAM) the template for an outage is a Basic outage and these have strict rules to ensure essential data can not be changed and databases can 'talk' to each other. Essentially it is like three databases (the transmission licensed areas of England & Wales, Scotland South and Scotland North). It has Assets (Branches identified as NASAP's) and Substations. It has parties, freecodes and outage description codes (D codes). It also has enhanced features included sophisticated linking of outages, ability to hold outage notes, ability for external DNO's and TO's to directly interrogate the database.

Querying data

Generally TOGA queries should be remembered and when you return to a query screen the information should be there. Unfortunately TOGA does not always respond in the same way due to the ways different screens are accessed. Also as part of the original design a constraint of no caching (temporary storage) of data was imposed. Similarly the back arrow on the browser does not always work.

Other data

TOGA will hold other data including the SO operation notes, risk outage information and data associated with commissioning. Commissioning data is held in a separate area, which can be linked to outages.

TOPAM Basic Data – the building blocks for an outage

Assets and Substations

Every substation that is in a study or is required by the TO will be identified in TOPAM. Data held includes owner, voltage, group and commissioning dates. A substation can be allocated to a group. The group code eg NERING can be used anywhere in TOPAM that a substation code can be used and it will find data (outages) that have a match to any one of the substations in the group.

Every asset that is used in a study will be in TOGA. Data held includes owner, commissioning dates, asset type, associated substations and other codes to aid system availability monitoring. It should not be possible to use an "out of date" asset against an outage.
Both assets and substations will have a commissioning date and a decommissioning date. A decommissioning date can be entered in the future to show when it is expected to be decommissioned.

Note both Assets and substations can have internal parties allocated to them (not external parties). Thus any outage created from a basic outage that has substations or asset associated will automatically have the correct party code. Any changes to these parties can be "rolled out" throughout the database if required.

Parties

These identify those groups of people or companies that are involved in the processes of gaining access to the transmission system or need to know about outages on the

Transmission System. The key item for parties are that they allow you to search for outages that have a particular party associated. Party types:
- TO parties identify interested groups within the Transmission Owner
- SO parties identify interested groups within the System Operator
- External Parties are those external groups that require information under the requirements of the Grid Code. They are Power Stations, Distribution Network Operators (DNO) and Directly Connected Customers (DCC). Note DCC's are treated the same as a DNO in TOGA.

External parties are only associated with basic outages. Therefore assuming the basic outages have the correct party then all outages will have the correct party codes.

Freecodes

Free codes need to be defined; selected users will have rights to be able to update these. Wherever free codes are used they are chosen from a pick list. Freecodes can be made inactive so they are no longer available to select from a list.

Substation Groups

Substations can be allocated to a group and given a code. This group code can then be used in the same way as an individual substation code in the search screens. These are most likely to be used for small groups probably based around discreet parts of the system eg Mersey Ring Substations

Basic Data (Basic Outages)

These form the basic information from which all outage requests to the SO must be created. Basic data records are simple to create but strict rules apply. The core data of a Basic Data record cannot be changed. This will ensure that the correct NASAP's are against the correct outage descriptions and that computer systems can "talk" to each other ensuring "apples are compared with apples". All outage requests to the system operator have to be made using a valid basic outage. As well as records for every combination of outage there will be a record for every substation to enable substation level entries to be made.

Note, if there is a change to a basic outage due to changes in the network layout then a new basic outage must be created. Existing Basic outages should not be modified as this will affect history. The existing basic outage will have an end date set and this can be done in advance

Basic outage Features

A basic outage will have:

A licensed area

An Owner

Group – Basic outages can be grouped so that similar ones can be found. A group code is allocated that would match the basic data reference of the outage that combines the maximum amount of the transmission system out of service. Eg Basic outage reference HURS2M1 would cover the circuit mesh corner and transformer and reactors teed off the corner. The code HURS2M1 would be also be used as the group code for this outage and also the individual basic outages for the circuit and transformer(s) associated with the mesh corner.

Substation(s). At least one associated substation

Asset(s) As many as are required

Internal parties – These are associated by using the parties on the Substation and or assets.

External Parties. A basic outage can have several external parties and each one can have it's own comments (OC2 comments). This means that comments that are specific to that Grid Code User will only bee seen by them. Note there are security on these comments so these can be hidden from some users.

Freecodes. Freecodes can be allocated to a basic outage.

Basic Outage – Updating Parties

It is possible to update a party on a basic outage and apply that change to all existing outages associated with the basic outage. This is done by specifying the date from which all outages that start after the date the change will be applied.

Outage Types

This functionality is generally invisible to most users of TOGA, however it does enable the TO to create outages that are not relevant to the SO. It is useful to understand what is happening in the database. Every outage entry will be one of the four types below. A basic outage is either standard, DNO or comment.

TOGA will at a later date be able to accept DNO's logging on and submitting files to National Grid that will notify us about their outages. Currently only viewing National Grid outages is available. Note all third party notified outages are known as DNO outages in TOGA.

Standard Outage – Main transmission outage entries:

An outage or entry in the database of a valid combination of substations and assets including bus bars based on a Basic outage entry. This will include outages that are required by the TO for work on DNO assets. The majority of entries will be this type. Note Protection bookings will be identified as in service bookings against one of these valid basic data entries.

Note outages entries required on DNO Busbars to enable work on NGT assets can be created as this type of entry.

DNO outage.

This is an outage notified to NGT by a DNO or other user of one of their assets. It will be created against a valid basic data entry and will only be updateable by the SO. If a TO wishes to create an associated work entry for unlicensed work then a TO entry can be created against the same basic data and linked to it as a duplicate. An outage that is required by the Transmission business on a DNO asset to maintain for example a DNO 132KV bas bar to maintain an SGT LV bus bar disconnector will be created as standard outage. (Final business process details in this area to be decided)

Note Directly connected customers in TOGA are also known as DNO's and therefore their outages, if any are required, will be DNO outages.

Comment Entry

This is an entry that generally does not affect any assets of the main system and it does not require the same level of change control. Generally entries at a substation level (those entries against a substation basic outage, eg ABTH2) will be comment entries.

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TO entry

An entry that is only used by the TO and can be used to create entries for unlicensed work or dummy entries for TO use, either free text or against a DNO basic outage. These outages are effectively in the plan but are ignored by the SO. They can not be created against a standard outage as it is assumed that the SO will need to see the outage.

SO Confidential

This outage type enables a SO user to make a general comment that needs to be kept confidential from the TO. This is likely to be for commercial reasons.

Outage Numbering

Outage numbers can have different prefixes depending on how they are created. For a TO the system can be set to force TOGA to provide a unique number or an external source will provide the sequence.
Scottish Power. The TO has been allocated a prefix of SP and SP is set to provide the outage number.
Scottish and Southern The TO has been allocated a prefix of SH and TOGA is set to provide the outage number.
England & Wales TO. No prefix is allocated and TOGA is set to expect a six digit number generated by an external source.
For a TO if an external source provides the outage number (SP and E&W) outages loaded by file must have an outage number. Outages entered via screen entry by a TO can be manually given a number or if this is not done an 'NG' number will be allocated.
For a TO if TOGA is always set to generate the number (SSE) either by screen entry or via file upload the number will always be prefixed by the TO's unique prefix.
When the SO creates an outage number it will always be given an NG number but they will have the option to enter a TO number for SP and E&W.
Every DNO also has its own prefix so a supplied DNO outage number can be used with it's nominated prefix to make the outage unique when it is entered into TOGA.

Request Process

The request process is there to allow the TO to present to the SO requests for outages that are required on their Transmission System. A request is a record of the changes made to an existing outage or the record of the information when an outage is added to the plan. If necessary a request can change status between the SO and TO several times whilst options for placement are explored. An outage can have several associated requests if several changes are made to that outage. All changes from the Scottish TO's will come via this route. Each request has it's own unique system generated 'R' number. The process can be used to ask "I would like this outage sometime in the next 10 weeks" or to specify exact dates. This process mimics what would happen when e-mails are sent to and from the SO and TO requesting a new outage.

Request Security

The request outage process has it's own security function and it will be hidden from those users that are not interested in this. Also note that the fast track into plan (see below) has its own security function.

Request Statuses

A request can have various statuses. Some of these statuses are required by the system and can not be changed. It is possible to define new statuses, to enable interim parts of the process to work. For every status it is possible to define who can update the outage at that status and also who can change the request outage to that status.
System statuses are 'initial', 'with SO', rejected, disagreed, pending and in plan.
 Disagreed, in plan and cancelled are final statuses and a new request raised against the same planned outage. It is not possible to have more than one active request to update an existing planned outage.

Querying and viewing request outages

It is possible to query on request outages in various different ways to find the ones that are required. It is possible to view the data in two different ways.
A standard list with a link to view the request details or view an 'updateable list'. The updateable list allows the user to view the main details of the selected requests with the ability to update fields and save the data, without opening a new window.

Processing request outages.

When viewing the standard list of request outages it is possible to bulk update the status of selected requests. This also includes the ability to fast track an outage into the plan if the SO is happy that the dates and information is ok and the outage is secure. A request outage can be fast tracked if it has one valid proposed start and end date or if there are two sets of proposed start and end dates, one of these has been selected as 'N'.
If there has been discussion about the outage the SO will finally set the request outage to a status of agreed and the TO can then check there are no further issues and raise a pending outage from the request.

Request outage other.

When the SO reviews a request outage it can set the risk flags to indicate if there are any cost, demand or winter ERTS issues. Also note the SO or TO can set a flag to indicate if there is any commissioning, HVSCC requirement during the outage.
Links from a request allow further information to be added.

Notes on a request outage. The SO and TO notes on a request outage form the history behind the request. If a request outage is for a new outage then these notes will be passed to the Planned outage. If it is for an update to an existing outage they will not be passed over. The TO notes may include the reasons for the request. The SO notes should include comments back to the TO or comments about the placement.

Pending / Planned Process

Planned outages form the core part of TOGA TOPAM and this is what the SO will work to when assessing the outage plan for safe an secure operation. The pending process manages the simple quick changes to the plan. A copy of an existing outage can be taken, modifications made and the change presented to the SO for approval. This outage awaiting approval is a pending outage. There is a comprehensive screen query and also many different reports that can be used to manage the transmission plan.
A planned outage has several fields to store the core data but outages can be specially identified eg fault outages, commissioning outages risk outages etc.

Change code requirements

Managing Outages - Querying and listing planned outages

There is a comprehensive screen query which can be used, the common functions that limit the search are the licensed area and the internal party codes. The party codes should be set to ensure the planning groups can find their outages of interest. The resulting list will be displayed on a separate screen.
Control Room List Filter. There is a special query that is used by the control staff to give a different view of the plan and can be directly used to enter actual outage information.

Planned Outage Statuses.
Any outage that is in the database will have 'planned' status. Outages that are waiting to go into the plan have a 'pending' status. (similar to TOPAM II) The various sub statuses are for a planned outage are:
Planned ie Planned – Planned. The outage is in the plan waiting to be taken out of service.
Planned – Started. Set to this status automatically when actual start dates are entered
Planned – Complete. Set to this status automatically when actual end dates are entered
Planned – Not taken
Planned – TBA
Planned - Cancelled

For an outage to be 'in the plan' as recognised by the SO it must be planned and have a status of planned started or complete

Creating and updating a planned outage.

Rules are that a SO can directly create a **standard outage** straight in to the plan and a TO can create a standard outage that needs to be 'sent' (awaiting agreement) to the SO for approval. A TO can also create this outage from a Request Outage.
TO update rights. Some changes to an outage can be made directly by the TO without reference to the SO. The field changes that do need notification are the dates, ERTS, Daily/Continuous, equipment out of service. Also note the start time of an outage can be directly updated by a TO up to a user settable number of days before the outage starts. This is set to 7 days which will mean the SO will need to agree a change that is made at less than seven days notice.
Links are provide at the bottom of the planned outage screen to enable updating of the other information associated with an outage. Additional Freecodes and parties can be added by following these links.

Changing the equipment out of service.

An outage that covers a large amount of equipment can be reduced to a smaller subset by choosing a new basic outage data from the outages that have the same group code and resubmitting this to the SO.

Specialist Information associated with an Outage.

Additional items can be stored against an outage the following provides details on these and some of the rules that are applied.

Outage Notes

For each outage it is possible to make additional notes these are only useable by authorised SO users. Limited formatting is available. These will replace operational notes; the notes with the following notes:
Initial Placement – used by the SO at the year ahead process to make comments about the outage, why it is there the issues etc. Note once the plan has been handed over these notes are frozen.
Optimisation – used to make the final notes before handover at the 3 week ahead stage.
Delivery – notes available to the delivery engineers.
Control – facility for control to make comments about the outages provide feedback etc.
Each note will record who last updated the notes and also TOGA will warn a user if the dates of the outage has changed but the most recent notes have not been updated.

Unwise assets

TOGA has a feature where a group of assets can be specified and given a name. When using TOGA the system will check to see if it can find any of these assets in the named group out at the same time. If it does when any of the outages that contain these assets a user defined warning message will be given.

For an outage to get in to 'the plan'

Outages do not have to go through the Request Process and can be entered by the TO into Pending. The SO can enter outages directly into the plan or directly into the pending.

Request outages can be moved from a Request to Pending by the TO or the SO but only the SO can move a request into the plan.

Supplementary Features

Risk Outages

Three types of risk outages can be identified in TOGA and additional information added. There is additional security on these an their visibility can be restricted. Comments and notes can be made against each type. A flag can be set giving access to additional fields, via a link, to enter the additional information. An outage can be identified as one or all.
Demand Risk –
ERTS Risk -
Cost Risk – Only available to selected SO users.

Outage Linking

There are comprehensive outage linking facilities in TOGA and also warning messages if the linking rule is broken.
Duplicate – the linked outage must have the same dates as the main outage. eg Duplicates for cross border TO outages.
Parent Child – The linked outage dates must be within the period covered by the main outage. eg bus bar outages relating to a main circuit outage
Leader – this outage must be before the linked outage. Dates must not overlap
Follower – the linked outage must follow the main outage. Dates must not overlap.

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Commissioning information

A record can be created in TOGA with an 'effective date,' the date that the change that will occur. Changes can be categorised into a "System Change" or a "Commissioning" change. A "System Change" being a physical change to the system and a "Commissioning" change being the date new equipment is enregised / de-energised. It is also possible to indicate if the change is for new equipment, replacement equipment, remove equipment, and update equipment.

The Commissioning record will hold outline details of the change and there are check boxes to indicate what will be the effect of the change and what is required from other sources on or before the change can occur. This can be 'intelligently' linked to a normal outage record (warnings are given if there are any date discrepancies between the commissioning record and the outage record). The following items can be checked as being required for each change and comments made against each item:

- Effective date of change
- Operational Diagram required
- Commissioning program required
- HVSCC required
- Rating schedule
- Protection Schedule
- IEMS change
- ELLA (OLTA) change
- Site responsibility Schedule (SRC)
- Equipment Acceptance certificate
- Also add a link to an associated Asset (NASAP) if applicable

From the effective date the system will work out when the items from third parties should arrive with the SO.

Facilities are available to carry out comprehensive searches including find entries that have changed since certain date

Summary of Report Purpose / Function

Asset Combination Search.
Menu – Asset. comb search
This allows the user to find if a similar combination of outages (NASAP's) have been taken out of service before.

Availability Report:
This report allows a User to generate a report that shows the availability of equipment during a specified period. This is based on the outage dates associated with NASAP's that have a monitoring category selected A NASAP can be selected as being monitored for either MIS, Connection or Compensation. There are different types of report available:
Outage – all o
NASAP's with Outages – lists outages with Nsaps
Summary by circuit type
Availability is defined as the total time the circuits are out of service divided by the total time all monitored circuits could be in service for the selected period

Changes Report
This report allows a User to generate a report that shows a list of outages that affect specified external parties and have changed since the user last ran the report.

Customer Report:

This report allows a User to generate a report that shows key information about outages and is intended to be used by the external interested parties.

E-Mail Reports:

These reports allow reports to be mailed to external recipients.

Monitoring Report:

This report allows the User to generate a report that shows outages and the changes made to them in terms of start and end date, and the notice period of each. A summary report, detail report and the ability to download the monitoring detail information to a local file are available.

The following types of changes are included in the reports: -

1 Bookings that have had their date changed to another date.

2 Deletion from plan.

3 Added to plan.

Outage Changes:

This produces a report for a licensed area of changes that have occurred since the last time the report was run.

Outage Reports:

There are several Sub Reports in this category:

Basic:

This report allows a User to generate a report listing basic outage records within TOGA.

General:

This screen allows a User to generate a report listing planned or pending outages. In addition the user may enter a Round Up date (which uses the outage history to show the outages as at that point in time).

The report offers detailed and summary report formats: -

1 Paged Print option (which allows groups the outages by their starting week and displays the week number in the report heading)

2 The ability to group the data by substations

3 Download options for files of either planned or request outages listing outages that start, end or span the specific date.

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Request:

This screen allows a User to generate a report that displays a list of request outages. The report can either be run in: -

1 Summary format (which shows the outages one line at a time)

2 Detail format (which displays one request outage per page)

3 As a CSV file download

Transm plan:

This report allows a User to generate a report that displays a list of all the transmission outages covering a chosen time period. In addition, if the user enters a 'changes from' date then the report indicates any changes made to the transmission outage plan since the specified date.

Weekly and Daily:
Menu - Topam Reports>Outage reports>weekly
Menu - Topam Reports>Outage reports>daily
The input selections for these two are almost the same. The daily only allows reporting on one day. The outputs are different.
These report s allow a User to generate a list of the outages that start in, end in or span the specific date/date range.
Include SO party- choose correct one for the geographic area, usually only used by SO
Include TO party - choose correct one for the geographic area, usually only used by TO
Display Summary Reports – check if only a summary list is required
Which Comments to display – User can choose to display a set of notes with the outage
Include outages of 'Affect operation/study' impact – for SO usually checked
Include outages of no impact (to SO) - - usually unchecked as SO

Room Monitoring:
Topam Reports>room monitoring
This report generates a listing of all the planned outages for the day specified highlighting outages that have: -
1 Either a planned start date in the past but no actual start date
2 Planned end date in the past and no actual end date entered.

There are 2 distinct reports: -
1 The first is a detailed output of the planned outages starting on a particular date.
2 The second is an outage per line listing of planned outages whose start or end date is in the past but does not have an actual value entered.

The parameters are as follows.
Report date – defaults to today
Licenced area – choose if required
SO party – choose appropriate control party as required
TO party – not usually required as a SO

Room Workload:

This report generates a listing that shows a summary of the number of outages starting grid ending each day in a specified time period. It also shows the details of the outages on a page per day basis.

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TOPAM Download:

This report allows the User to select required outages and produce a listing of the main details of the outage and selected notes. Unlike the majority of the TOGA reports which give the option of an HTML or PDF format output, this report will be configured to automatically open in Microsoft Word in portrait format.

TORF Report:

This report allows a User to display a list of all of the pending outages for a particular plan year. The user can optionally enter a 'Changes Since' date/time which will restrict the report to pending outages which have been created or modified since the entered date.

Unreliability Report:

This screen allows the User to generate a report that calculates Average Circuit Unreliability due to outages taken to repair plant. The report uses the equipment group codes to identify when a repair outage is taken. The duration of each outage is calculated for the date range and specified in minutes.

Outages taken for repair purposes are those outages booked within the plan year for which the work content is primarily for the purpose of repairing a plant defect.

The report consists of three sections: -

1 List of the relevant repair outages in asset order

2 Lists all of the assets and shows the effect of the repair outages on the reliability of the circuit

3 Shows the average circuit unreliability by the equipment group.

Basic Data

Basic Data contains the building blocks for the TOPAM application in TOGA. These building blocks can be added and modified by selected users.

Assets:

These define the basic building blocks of the system and consist of Lines, Cables, Transformers etc Each item of plant has a NASAP code associated with it, and an asset type.

Depending on your permissions you will be able to add / query / amend asset details. Follow the onscreen help to do this.

Basic Outages:

These are the actual outages without dates or times in a preliminary format with a lot of the data required that is true all the time. They are comprised of one or more Assets and every outage in the system originates from a Basic Outage. Selected users in the TO and SO can create amend and update basic outages. They too can have a valid from date and valid to date.

Free codes:

This selection gives a list of valid Free codes in the system for use with planned outages. This screen allows the addition of new and update of existing free codes.

Parties:

There are two lists of Parties TO Parties and SO Parties, from these screens parties can be added or updated.

Plan Year:

This screen allows the addition and update of plan years for each TO area specifying Start Date, End Date, Freeze Date and Handover Date for each year.

Public Holidays:

This screen allows the input and update of public holidays in each of the TO areas.

Status Code Definition:

Status Codes are the key to each outage whether in the request or planned phase. This screen is View only to the SO and TO User and can only be updated if given the permission to do so. Clicking on a Status will enable you to see who has the rights to view and change an outage to that status.

Substations:

The only sub option visible to the SO is Query, which allows the user to query substations in the system. No Update facility exists to the SO.

Substation Groups:

The only sub option visible to the SO is Query, which allows the user to query substation groups in the system. No Update facility exists to the SO.

Work types:

This screen allows the user to view and add DCD codes or work types to the system.

Technical

The system requires Internet Explorer 5.5 or greater and an Internet Connection with a recommended bandwidth of 512K. Any reasonable PC capable of running IE 5.5 will be suitable. When using the system it will not download any data on to your PC unless you specifically request a download of data for further analysis. The displays are designed around a resolution of 1024x768 pixels best displayed on a 17" screen or equivalent LCD screen.

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Appendix 1 - Data codes

Static data and codes Scottish Power and Scottish and Southern and E&W

Request Outage status codes as used by TOGA

Request Status	Request Description	Final?
Initial	Initial outage request before submission to SO. This is used while a TO is assessing its requests before submitting to the SO. SP will not use this code, as SP's own systems will manage this.	No
With SO *(A Change of status from the TO)*	With System Operator for assessment. This is the SO 'in box'. National Grid SO will asses all outages that are given this status whether for the first time or subsequent updates. For outages that have actual dates and the SO is happy with the dates then the SO can accept the outage directly into the plan.	No
Reassessment (Sent by SO to TO)	With the TO for reassessment	No
Rejected (Usually set buy SO)	Outage request that will not be placed but was still required by TO. The usual planning telephone communication should be used before setting to this status.	Yes
Cancelled (can be set to this status by SO or TO)	An outage request for a new outage or a change to an existing outage that is no longer required. If the request is for a change to an existing outage the existing outage will remain unchanged.	Yes
Agreed (Sent by SO to TO)	Agreed by SO but waiting final acceptance by TO. This is used where final confirmation of an outage change is required from the TO. This could be where the SO is suggesting dates in response to a "window date" request from the TO. Note: When the SO sends back an outage with new suggested dates that are different to the fixed dates actually requested, then the SO should use 'Reassessment'	No
Pending (set by TO)	An outage request is set to this when request outage becomes a pending outage before final acceptance by SO. This status is used by the TO to indicate to the SO that he is happy with the final dates as suggested by the SO and is likely to occur after a status Agreed. This status will not occur for outages received by file transfer as SO will always accept outage straight into plan if outage dates are secure.	No
In Plan	The request is finished and the outage is in the plan. This is set automatically by agreeing any request outage into the plan	Yes

Final?- If a status is Final then another request with a different request number can be raised against a planned outage with the same number.

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Planned Outage Statuses

Status	Description
Planned - Planned	An outage that forms part of the plan. An outage will first get this status when it goes into the plan for the first time either from a Request Outage or from a Pending Add outage
Planned - Started	An outage that has started and actual start dates have been entered. Note it is only possible to update the end date at this status.
Planned - Complete	An outage that has been completed and actual start and end dates have been entered. Note it is NOTpossible to update any dates at this status.
Planned – Not Taken	An outage that has not been taken. Usually set to this status at short notice by the SO. If necessary the TO can then use a Request Outage to make suggestions for a new placement or make a new pending entry.
Planned – Cancelled	An outage that has been cancelled but a record that is retained for history. An outage is usually cancelled by the TO either by submitting a file a request to cancel an outage or by submitting via the screen a direct cancellation of a planned outage to be agreed by the SO

Work types

The following are the available work types. Several of these can be used when creating an outage.

Code	Description	Usual Status Main Circuit
AVC	SGT AVC out of service	In Service
CLR	Clearance outage	Out of service
COM	Commissioning work with SO	Out of service
CON	Construction work	Either
DAR	Dar outage	In Service
GEN	Generator outage	Out of service
INS	Insurance inspection	Out of service.
OFC	Over flying conductors	Out of service
OPS	Operational switching	Either
PRO	Protection outage	In Service
PTT	On load trip test	In Service
RAT	Rating restriction	In Service
ROM	Routine maintenance (equipment outage)	Out of service
ROT	Risk of trip	In Service
RSS	Requirement for safety switching	Out of service
SCO	System construction outage	Either
UCO	User construction outage	Either
UNC	Unclassified	Either
ADR	Ad hoc repairs/maintenance	Either
DEP	Protection Depletion	In service
ANC	Ancillary equipment on site, air systems etc	In Service
DOC	Comment entry for information only	In Service

TO Significance Codes

Priority	Description
1	Must Have – Includes urgent defect repairs, construction work associated with third party connections, work associated with Railtrack possessions
2	Other construction work and essential maintenance including overdue maintenance and non urgent defect repairs
3	Routine maintenance that will have a significant impact on resource if moved
4	Routine maintenance that can be flexible
5	Other work that is taken when an opportunity arises and can easily be moved with no impact on TO resource

Change codes

Toga change codes must be unique and can be allocated for use in an individual Licensed Area or can allocated for use by all TO's in all Licensed Areas. The following codes are relevant to SPT and SHETL. Each TO will have a different letter applied where the * appears. SPT = P and SHETL=H.

Code	Description
*IJ	Planned work job content change
*AW	Additional work found during outage
*KO	Knock on from TO initiated change
*MI	TO Other
*RT	Reinstated - outage returned to the plan after being temporarily suspended.
*CT	Contractors problems
*PY	Incorrect outage duration for work
*W	Weather related due to inability to carry out planed work by TO
*PR	No resource or equipment available
OF	System Security
OH	Customer requested change from DNO or DCC
OK	Consequential change from SO initiated change
OS	TO Consequential chnge due to another TO
OO	SO other
OW	Weather related due to system security.

Outage Number Prefixes

Company	Outage Number Prefix
Scottish Power	SP
Scottish Power's DNO	SD
Scottish & Southern	SH
Scottish & Southern DNO	
System generated by SO user or screen entry by TO if outages are normally transferred by file	NG

Party Codes

These are the codes that are used to indicate who is requesting the outage or change to an outage. They can be codes that refer to the SO, TO or an external party. The following table lists these codes (Scotland). Note all users of TOGA will have a party code assigned to them. (This list will be updated to include all external parties)

Code	Type	User
PLSP	TO	Scottish Power Planning Group
PLSH	TO	Scottish Hydro Electric Transmission
SPD	EXT	Scottish Power Distribution
SHEPDL	EXT	Scottish Hydro Electric Distribution
PLSCOT	SO	National Grid Outage Planning

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Appendix 2 Help - Finding Outages in TOGA

The main screen based outage query is under the menu TOPAM>Planned Outages>Query.

This can be used to find outages with the ability to query on most data fields. All query items use logical AND, with the ability to query using logical OR within some items. Eg Parties.
The key fields are displayed below

Field	Tips
Display	**Planned Outages** – those that are current outages. Note, not all outage types are treated as "in the plan" see Statuses and "Only Type" below. Or **Pending** – those outage changes that have not been assessed to be part of the plan.
From	Select from the pop up calendar or direct entry
To	Select from the pop up calendar or direct entry
Only show outages starting or ending in the date range?	Only return Outages starting and ending within the From and To dates. Ie not ongoing
Outage Number	The search will return all Request Outages matching the leading characters entered. The search is not Case Sensitive and 'starting with' will work.
Plan Year	Returns outage with a plan year selected. Note, to find all outages for a full plan year enter the date range only and leave this blank
Basic Reference	Allows searching for the same outage equipment. Note it will accept wild card – starting with, so the first few characters can be entered. (All outages that form part of the plan must be created using the correct basic data outage
Licensed Area	Select from drop down list.
Parties	Find those outages that have the selected party/parties associated Select from list containing the following types. Internal parties type TO and SO and are user defined. External parties consisting of Power Stations (prefix P) or DNO's/directly connected customers (prefix D). Select one or many. DNO,
Status	One or many. Finds all outages of the statuses selected. **Planned** Cancelled – not in Plan Complete – in plan Not taken – currently not part of the plan Started – in plan **Pending.** Awaiting agreement – waiting SO to Agree outage Editable – outage currently being edited Rejected Pending – outage updated rejected by SO
Work Types	These enable grouping of the same work types eg construction.

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	Select multiples from the list. Note these can be combined as "AND" or "OR". See separate list for details
Free Codes	These enable grouping of outages the same work areas, eg a particular construction project. Select multiples from the list. Note these can be combined as "AND" or "OR"
Substations or Groups	Searches can be completed by selecting one or more substations. To add a substation type the code in the box and press add. This will add the substation to the substation list. Keep doing this until required substations are displayed. If a substation code is not known the search button will take you of to the substation query screen and the correct substation found and selected. On returning to the screen the add button still needs to be pressed to add to the search screen Searches can also be made on pre-defined groups of substations by selecting group and typing the appropriate group.
ERTS Between	Allows finding of outages that have a ERTS greater than the specified number – must be in hours
ERTS To	Allows finding of outages that have a ERTS less than the specified number – must be in hours
TO Significance	Leave blank to select all or choose one from the drop down list. See separate note on meaning
Only Type	If none checked all will be displayed. Standard – outages and in service bookings associated with main equipment that will be of interest to the TO as well as the SO Comment – general information entries associated with equipment and substations where main equipment is not affected TO Bookings – outages that are interest only to the TO DNO – outages on equipment that has been notified to the SO by a TO
Only Display	If none checked all will be displayed. Finds only those outages that are of the special type indicated
SO Impact	If none checked all will be displayed. Default usually A, B, C & D
Only display outages which have changed since:	Only displays outages where the status has changed since the specified date
Order By	Select either, Start Date, Outage Number or Last Updated
Display List Type	Select from drop down list