NTESMO

System Control – Plant Outage Procedure

Version 2.0

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Contents

1. Purpose

This procedure specifies the processes that:

(a) Generators and the Network Operator will use to plan, gain approval for, and conduct planned plant outages,

(b) the Power System Controller will use to coordinate and sanction planned plant outage requests.

(c) Generators, the Network Operator, and the Power System Controller will use to manage forced outages.

(d) Generators, the Network Operator, and the Power System Controller will use to assess and manage emergency performance issue outages required for the safety of people or plant, or to manage plant performance issues affecting system security or system reliability.

(e) Generators, the Network Operator, and the Power System Controller will use to return equipment to service following an outage.

2. Scope

This document is produced to provide clarity to all System Participants and is intended to be read in conjunction with the System Control Technical Code (SCTC) and Secure System Guidelines (SSG). Terms defined in these documents are not defined herein. Some references are provided to these documents for convenience only.

The Power System Controller is responsible for coordinating and sanctioning all plant outage requests (SCTC 2.2(c)). The procedure applies to generation, transmission, or distribution plant connected to the Darwin-Katherine, Alice Springs, and Tennant Creek regulated power systems for which the Power System Controller determines that coordinated outage scheduling is required to manage the risk to system security or system reliability.

This includes generators, black start facilities, equipment providing voltage control or ancillary services including batteries and capacitors, any part of 132kV and 66kV transmission systems, 22kV and 11kV distribution system equipment connecting power stations or zone substations, power station or zone substation buses, nodes, and transformers. It also applies to switchgear, protection systems, auxiliaries, communication network, and control system for any such equipment.

Where potentially commercial-in-confidence information is necessary to ensure the application of this procedure is sufficiently clear, the relevant information will be added to the applicable Operating Protocol or Service Level Agreement in place between System Control and individual System Participants.

For further understanding or resolution of issues relating to this document, refer all matters to the Power System Controller (and any dispute will be governed according to Clause 1.5 of the SCTC).

3.Acronyms and roles

3.1. Acronyms and forms

Term	Meaning (in this procedure)
AVR	Automatic Voltage Regulator.

Term	Meaning (in this procedure)
FO	Forced outage.
NTC	Network Technical Code.
OTR	Outage and Testing Request (electronic form used to request planned outages and/or testing activities, and to notify certain unplanned outage details).
RFA	Request for Access (electronic form used by the Network Operator or Network Users for network access/outage requests, where applicable).
RFO	Request for Operation (electronic form used by Generator Participants, where applicable).
RTS	Return to Service (application/notification submitted when works are complete and plant is ready to be returned to service).
SCADA	Supervisory Control and Data Acquisition.
SCTC	System Control Technical Code.
SSG	Secure System Guidelines.

3.2. Roles referenced

- **System Participant**: A party participating in the relevant regulated power system and required to comply with the SCTC/SSG and applicable procedures.
- **Generator (Generator Participant)**: A System Participant that owns and/or operates generating plant.
- **Network Operator**: The party responsible for operating the transmission and/or distribution network and carrying out field switching.
- **Power System Controller**: The function responsible for coordinating and sanctioning plant outage requests and directing operating actions to manage power system security and reliability.
- **System Control Outage Planning Team**: The System Control team responsible for managing all outages requests and coordinating long-, medium- and short-term outage planning assessments and issuing related communications (including Risk Notices).
- **Hudson Creek Control Room**: The System Control real-time operations point of contact for verbal authorisation, dispatch instructions, and day-of-works coordination.
- **Connections Team**: The team responsible for connection-related compliance testing coordination and review/approval steps referenced in this procedure.
- **Network Performance team**: The team referenced for coordination where Power and Water assistance for isolations/access is required (as applicable under operational protocols/service level agreements).

4. General Approach

As a guide, reasons System Control Outage Planning Team will not approve an outage include, but are not limited to:

a) there is reason to believe that there is a safety risk to personnel, members of the public, or equipment,
b) that it assesses will result in an unacceptable risk to system security or system reliability,
c) there is a conflict with another outage that has been deemed more imperative to system security or system reliability,
d) result in equipment ratings being exceeded,
e) result in a breach of the Reactive Power Reserve requirements (SSG Section 5),
f) result in a breach of the Standby Reserve requirements (SSG Section 4),
g) result in a breach of frequency control requirements (SSG Section 3),
h) result in customer load shedding,
i) insufficient information is supplied for the System Controller to conduct an assessment,
j) submission timeframes are not met, and therefore there is not sufficient notice for the Power System Controller to complete the assessment.

The Power System Controller's approval assessment will include consideration of a credible contingency event (SSG Section 4) occurring during the period that the outage occurs, and the required actions to return the power system to a secure operating state within thirty minutes following the credible contingency.

Where System Control Outage Planning Team requests additional information to assess outage applications, a System Participant must provide the information as soon as practical, and within the timeframe specified. Where the required information is not received, the Power System Controller may reject the application and the System Participant required to resubmit.

Approval assessment of Long Term and Medium-Term outage plan submissions by the Power System Controller does not grant approval for specific outage dates and times. Outage dates are not approved by the Power System Controller until the Outage and Testing Request (OTR) is approved and risk notice issued in accordance with the Short-Term Planning process. Where a System Participant requires outage dates to be approved with additional notice in order to complete detailed planning such as contractor bookings and travel arrangements, it is the responsibility of the System Participant to submit their Medium Term and Short Term planning submissions earlier than the minimum dates, taking into account the Power System Controller response times outlined within this procedure time frames.

In accordance with the Northern Territory Electricity Ring Fencing Code, the Power System Controller is to conduct its business without discriminating against another Electricity Entity. Long, Medium-, and short-term outage planning requested by System Participants will be assessed and approved in the order in which it is received. If two System Participants submit requests for competing outage windows, the request received at the earliest date and time will be accepted. The only variation to this prioritisation is where a risk to safety, power system security, or power system reliability is identified. Where a System Participant is requesting an outage that will restrict the generation output of another party, the Power System Controller will undertake coordination between both parties to align network and generation outages to maximise the overall availability of generation.

For the removal of doubt, any reference in this document to Outage and Testing Request (OTR) applies to:

(a) Outage and Testing Request (OTR) electronic form required to be completed by Generator Participants; and

(b) Request for Operation (RFO) electronic form required to be completed by Generator Participants; and

(c) Request For Access (RFA) electronic form required to be completed by Network Operator or Network Users.

5. System Risk

5.1. Elevated Risk Outages

Scheduling of outages or testing activities that pose an elevated risk to power system security or power system reliability will require additional planning. Outages for which any of the following apply are referred to in this document as having elevated risk, and additional requirements are applicable:

(a) equipment classified as protected events (SSG Section 3).

(b) likely to take longer than two weeks.

(c) plant affects the output of more than one generator unit, e.g. power station bus or combined cycle steam turbines.

(d) disrupts 132kV or 66kV transmission feeders.

(e) disrupts 22kV or 11kV distribution feeders connecting substations or power stations.

(f) requires customer load shift of more than one distribution feeder.

(g) will require a generic system constraint or network constraint.

(h) activity has previously resulted in a power system event.

(i) planned to be undertaken during the wet season if connected to the Darwin-Katherine power system.

(j) planned to be undertaken during summer or winter if connected to the Alice Springs or Tennant Creek power systems; or

(k) if advised by System Controller.

If a System Participant is not sure if an outage or works will change the risk profile for power system security or power system reliability, they will contact System Control Outage Planning Team to discuss further.

5.2. System Risk Assessment

When considering the conditions in which an outage can proceed, the Power System Controller conducts a detailed risk assessment that considers likelihood and consequence of the possible N-1 contingency events occurring, and for outage types that exceed or are likely to exceed 2 weeks, N-2 contingency events. In some cases, non-credible contingency events may be considered if the Power System Controller reclassifies them as credible contingency events due to the plant being taken out of service.

The likelihood of a contingent event occurring is based on an assessment of the historical frequency of contingency occurring, disabling of protection systems or auto reclose functionality, weather forecast (typically based on Probability of Exceedance (POE), with POE 50% applied for normal daily operations, POE 90% for low load scenarios, and POE 10% for high load scenarios). Additional considerations include availability of monitoring and operational controls including the ability to suspend works if weather conditions deteriorate, duration of the outage and the proportion of time customers are exposed to risk, the

presence of concurrent works that may increase the likelihood of a contingency event, the level of mitigation measures applied for concurrent works, and the potential exposure under frequency load shedding.

An assessment for consequence is undertaken with due consideration of the asset criticality and impact to customers, the number of customers at risk, the classification of customers affected, confidence in load forecast accuracy (typically POE 50% forecast), number of customers that can be restored in a short duration, length of time to restore all customers, the type of outage (continuous, cyclic, rotational), work recall time to return the plant to service.

Typically, the Power System Controller will work with System Participants to establish mitigation measures for the outage that will aim to bring the residual risk level to 'System Normal'. If the residual risk cannot be mitigated the Power System Controller may reschedule or cancel the outage.

The Power System Controller may permit outages with undesirable residual risk scoring in the cases where it assesses that the risk to power system security or power system reliability to be higher if the works associated with the outage do not proceed.

6. Long Term Outage Planning

Long term outage planning covers outages occurring more than 6 months ahead and up to one year ahead.

6.1. System Participant Annual Plant Maintenance Forecast Submission

System Participants are required to submit an Annual Plant Maintenance Forecast to the Power System Controller (SCTC 6.10). The Maintenance Outage Plan must include:

(a) The maintenance programme for the System Participants plant for the following financial year, and
(b) An indicative maintenance programme for each of the 3 subsequent financial years.

Annual Plant Maintenance Forecasts shall include a brief overview of the work to be completed, the extent of the plant to be taken out of service, the impact on plant performance and compliance, an estimate of the time to complete each outage, recall time, and preferred window for the outage to be scheduled. Where multiple System Participants are requesting the same windows in the Annual Plant Maintenance Forecasts, the Power System Controller will undertake coordination between parties to reach agreement. Where an agreement between two parties cannot be met, the Power System Controller will arrange meetings to discuss the criticality of the asset, urgency of the work and risk of asset failure if the work is not undertaken. These criteria will be used to decide and advise both parties. While it is understood that not all activities can be scheduled ahead of time, this process should capture all known planned maintenance and capital work of elevated risk. The Power System Controller will use these plans to hold the selected dates for the requesting party. To ensure outage windows are optimised for all System Participants, plans should be resubmitted when dates are changed. System Participants are encouraged to resubmit Annual Plant Maintenance Forecasts quarterly. Where required, or on request, System Control Outage Planning Team will undertake quarterly outage coordination meetings with System Participants to review progress and discuss any updates or changes to the outlook for the rolling 12 months outages.

Where maintenance activities impact performance and compliance, an "Alteration to Plant" process may be triggered under the NTC Clause 3.3.3. This will need to be managed between the Participant and the Network Operator.

6.2. Annual Plant Maintenance Forecast Response

Following receipt of an Annual Plant Maintenance Forecast, the Power System Controller will review and respond in line with SCTC 6.10.3. The Power System Controller will indicate in the response the outages which classify as elevated risk outages and will therefore require preliminary assessments to be submitted.

When the Power System Controller conducts the long-term planning assessments the response will indicate the most likely window the outage will proceed and indicate if generation or network constraints will be required. The Power System Controller's response will also provide an indication of the outages for which it will require detailed contingency plans and test plans. The assessments at this stage will be based on the best available information, however there are several uncertain study variables, notably generation and system configuration and availability, as well system demand that are required to be reassessed during the medium- and short-term planning.

7. Medium Term Outage Planning

Medium term outage planning covers outages occurring more than 6 weeks ahead and up to six months ahead.

7.1. Preliminary Assessment Submission

Outages of elevated risk to system security or system reliability will require more detailed assessment, modelling, contingency planning, and potential constraint application. To provide System Participants with ample time to prepare, preliminary assessments will be submitted in writing to System Control Outage Planning Team with a minimum 30 days' notice. Preliminary assessment requests will include all the details relevant to a formal OTR, a risk description for the outage and likelihood of outage extension, steps to be taken to mitigate the risk pre and post contingency, and a detailed test plan for any online and/or compliance testing activities.

On receipt of an approved preliminary assessment, the System Participant must submit a formal OTR.

For transmission related outages, System Participants must refer to the Transmission Outage Guide to determine whether a preliminary assessment is required prior to submitting one. A copy of the Transmission Outage Guide can be requested from the System Control Outage Planning Team.

7.1.1. General information

Specific detail on how the work is to be conducted is generally not of use to the Power System Controller. Information submitted by System Participants must be concise and targeted to the needs of the assessment. Information of any equipment rating changes or other variables that will require changes to the Power System Controller's power system models, HV isolation points of the equipment to be taken out of service, proposed control system changes, protection settings changes, SCADA and communication network changes, AVR or governor changes must be detailed in the preliminary assessment submission. All such information must align with compliance requirements under the NTC and shall be provided to the Power System Controller.

Maintenance activities affecting performance and compliance may trigger an "Alteration to Plant" process under NTC Clause 3.3.3, requiring formal coordination between the Participant and the Network Operator.

7.1.2. Recall time and contingency plan

An outage contingency plan must indicate the high-level steps the System Participant will follow should the Power System Controller require the early return to service or partial return to service of plant. For a Generator, contingency plans must consider conditional return to service of generator units with restricted output or control. For the Network Operator, contingency plans must consider equipment bypass, partial restoration, temporary generator installation, alternate supply arrangements, alternate protection settings, and short-term equipment ratings.

7.1.3. Test plan

The System Participant must provide a high-level test plan for all non-routine testing such as load rejection testing or compliance testing. Additionally, for generator reliability run, the proposed generation outputs must be detailed such that the Power System Controller can outline the system loading and constraint requirements for each testing increment.

7.1.4. Compliance testing for new connections (Generation and Load)

To support equitable access for all participants undertaking testing, a structured test window allocation process will be applied.

For each testing window, participants must:

- Submit all required documentation at least 15 business days prior to the proposed testing start date;
- Have an approved compliance test plan in place the Connection Team; and
- Submit an Outage and Testing Request (OTR) at least 10 business days prior to the proposed testing start date.

System Control Outage Planning Team will then liaise with participants to confirm and allocate either the requested or the next available suitable testing window. The allocated window will be reserved while the submitted documentation is reviewed, and the Risk Notice is prepared. Each site will be allocated only one testing window at a time, with the duration limited to what is reasonably required to complete the current approved stage of testing (typically up to two weeks).

Participants are expected to complete all testing within the allocated window. Extensions are not guaranteed and will be subject to system conditions, including planned or forced outages and existing testing commitments. Where an extension is required, an OTR must be submitted at least one business day prior to the expiry of the current OTR. If testing cannot be completed within the allocated window and an extension is not feasible, a new testing window must be requested.

Participants must promptly notify System Control Outage Planning Team if they are unable to utilise the allocated testing window, in part or in full. Similarly, if system conditions prevent the use of an allocated window, the System Controller will advise that the window has been withdrawn. Reallocation of testing windows to other participants or projects will be at the discretion of System Control Outage Planning Team.

The testing process requires coordination with both the Connections Team and the Outage Planning Team across several key stages, including (but not limited to):

Connections Team:

- Ensure participants submit new or extension OTR within the required timeframes;
- Review Risk Notices prepared by System Control Outage Planning Team;

- Review and approve reliability run reports and testing results;
- Provide guidance on any derogations impacting outage planning.

System Control Outage Planning Team:

- Draft and issue Risk Notices to participants following review by the Connections Team;
- Approve the Commencement of Service form following the Connections Team's approval of reliability run reports and testing results.

Where a derogation applies, the Risk Notice end date must not exceed the approved derogation period. System Control Outage Planning Team will not act on behalf of the Connections Team or participants outside of this established process.

7.2. Preliminary Assessment Response

The Power System Controller will consider the 30 days' notice period to commence when all required information is received. If the submission lacks the required detail, or the documentation is too extensive, the Power System Controller will reject the application and request resubmission.

The Power System Controller will endeavour to provide a response within 14 days of the submission date, indicating the requirements for an OTR to be approved, the agreed dates, acceptance of the proposed contingency measures, test plans, and other required supporting documentation.

The preliminary outage assessment will use several uncertain study variables for generation and network configuration, plant availability, and demand forecasting. The Power System Controller will utilise best estimate based on historic data and known information of these and other variables when undertaking the assessment, however it is noted that these and other variables can greatly impact the system security assessment.

8. Short Term Outage Planning

Short term outage planning covers outages occurring up to 6 weeks ahead.

8.1. Outage and Testing Request Form Lodgement

8.1.1. Out of service – plant disconnected from the system

System Participants shall submit final Outage and Testing Request (OTR) to the Power System Controller with the minimum notice period of 10 business day as specified in SCTC 6.5.2(e).

For outages submitted with less than the minimum notice period, the Plant Manager must submit a written request to the Team Lead Outage Planning detailing the justification for the outage and the inability to meet minimum notice requirements. The decision to approve or reject the outage rests with the Team Lead Outage Planning and will be based on the criticality of the asset and the outage. Outages received with less than the minimum notice will only be considered if the Power System Controller deems that the outage is unavoidable according to the emergency performance issue outage or forced outage criteria in Section 10 of this document.

When submitting an Outage and Testing Request (OTR), System Participants must fully complete the form, including:

- Scope of Works: A high-level explanation of the planned activities.
- Impacted Assets: Identification of the specific plant or equipment affected.
- Outage Timing: The expected duration of the outage.
- Recall Time: Where applicable, the time required to return assets to service upon request.
- Contact Information: Direct details for the requestor.

All OTRs submitted by System Participant must include any contingency plans, test plans, and risk information identified during long-term or medium-term planning. If the outage has not undergone a preliminary assessment by the System Control Outage Planning Team, the System Participant must provide comprehensive risk details within the OTR to facilitate the Power System Controller's review.

Planned online testing where the plant under test remains connected to the power system also requires an OTR detailing all testing activities to be performed and associated risks.

8.1.2. In service work - generator online testing

Generators must use the testing section of an OTR for any online synchronisation or testing to be conducted either during a planned outage, or on completion of a planned outage prior to return to service. Generators must include the specific details of the desired testing outputs to be tested, including ramping actions. A generator must submit a final test plan to accompany any non-standard and/or uncommon tests such as load rejection tests and mapping.

8.1.3. Generation facilities opportunistic maintenance

Generation facilities (solar farms and synchronous generators) outages of less than 24 hours, with a recall to service time of less than 15 minutes may be approved at short notice on the day following verbal agreement with System Control Hudson Creek Control Room, and electronic approval assessment of a short notice OTR. In these circumstances an approval will consist of the OTR approval email and will not be accompanied by a formal Risk Notice. Upon completion of opportunistic maintenance, a Return to Service (RTS) notification is required to ensure the works undertaken are documented.

Opportunistic maintenance will be considered the lowest priority outage, after all long term, medium term, and short term planned outages, as well as unplanned outages. Typically, opportunistic maintenance process would apply to plant inspection or testing activities of a non-intrusive nature only for the 15 minutes recall time to be met.

Opportunistic maintenance approval will only be granted on the condition that the plant can be called into service should the Power System Controller deem necessary as the result of an unplanned outage elsewhere in the power system or a change in system security or system reliability risk. Approval of opportunistic maintenance on the day does not affect pre-dispatch merit order; the unit will be called into service according to the pre-dispatch merit order. For self-committed generating units, opportunistic maintenance requests should be requested for disconnection during the trading day when the unit is not offered.

8.1.4. Request for network access

Power and Water's high-voltage network isolations are coordinated by the Power System Controller, while field switching is carried out by the Network Operator. System Participants must include the Power and Water Network Performance team in any OTR correspondence where Power and Water's assistance for isolation is required, under the applicable Operations Protocol or Service Level Agreement.

8.2. Outage Assessment and Notification

8.2.1. Outage assessment

Short term outage assessment includes the use of more reliable generation and network configuration, plant availability forecasts, and demand forecasts.

The System Control outage and testing assessment process relies upon the information provided by System Participants of changes to their plant. A detailed risk assessment and risk notification can only occur if accurate information is provided by the System Participant in a timely manner.

If an outage is not approved, the OTR will be returned with the reason for not being approved.

If an outage is approved, the OTR will be returned with Power System Controller sign off and a copy of the Risk Notification / Generator Constraints document, which details the outcome of the assessment including:

- details specific to the outage,
- impact on market pre-dispatch,
- effects on the power system N-1 contingency events,
- actions to be taken prior to commencement of the outage,
- pre-contingent generation constraints,
- system conditions required to be met for the outage proceed,
- risk description and summary of contingency plans in place,
- details of the customer numbers at risk,
- assumptions made in the system study,
- System risk assessment.

8.3. Outage Commencement Authorisation

The conditions for a planned outage proceeding on the day are documented on the Risk Notification. System Participants must contact the System Control Hudson Creek Control Room prior to the commencement of any planned outage and receive verbal authority to proceed. If the conditions noted on the Risk Notification are not met, or an unforeseen event has resulted in a change of the risk profile for system security or reliability, the outage will not proceed at the time of the event.

9. Planned Outage Changes

9.1. Cancellations

Where a System Participant no longer intends to proceed with a planned outage, it must inform the Power System Controller via email, with the email subject “Cancellation – (OTR Number)”.

If a System Participant becomes aware of any changes to the information previously provided to the Power System Controller related to a long-, medium-, or short-term assessment, they must submit a revised plan in full as soon as practicable.

The Power System Controller may cancel an outage that has been previously formally approved. In this case, the Power System Controller will notify the nominated contact of the affected party of the cancellation

decision. The circumstances in which the Power System Controller will cancel previously approved planned outages or testing include:

(a) Changes in load forecast
(b) Changes in the weather forecast during the planned outage period, resulting in an increase in demand or an increased likelihood of a contingency event occurring
(c) Unplanned outage of another item of plant placing revised constraints
(d) Unplanned outage of another item of plant placing the system into a lack of standby reserve
(e) Unplanned outage of another item of plant resulting in inadequate reactive power reserve
(f) Conditions in the Risk Notice not satisfied

Following a cancellation, the Power System Controller will reassess the outage and work collaboratively with the System Participant to identify suitable alternative dates and times for the cancelled works.

9.2. Extension of Planned Outage OTR

A System Participant must resubmit an OTR as soon as possible when it foresees a planned outage extending beyond the previously approved date and time. The OTR must be submitted with the original OTR number and the reason for extension.

OTR extensions must be submitted prior to 12:00 PM on the outage end date of the previously approved OTR. Failure to do so will result in the submission being considered a forced outage for market dispatch and reporting purposes. If a planned outage OTR is extended to complete works beyond the original scope, approval may not be given by the Power System Controller if doing so could compromise reserve requirements or impact the scheduling of other previously approved planned outages. If the out-of-scope work is to rectify an issue identified during the outage that requires rectification prior to return to service because of risk to safety of plant or personnel, or system security, the outage extension will be approved as a forced outage.

At least one business day is required for System Control Outage Planning Team to formally produce a revised Risk Notification. If one business day notice is not provided, there may be delays in approval assessment of testing activities.

9.3. Revision of Planned Outage OTR

A System Participant must submit a revised OTR for a planned outage when any details contained in the approved OTR are altered. This includes changes or expansion of the work to be undertaken or revisions to online testing requirements.

If the changes to online testing requirements differ from the test plan substantially, the Power System Controller may require the full OTR approval assessment notice period to complete the assessment.

If the Power System Controller assesses the revision to not change system security or constraints application, the revised OTR may be approved without issuing a revised risk notice.

10. Unplanned Outages & Testing

Unplanned outages, whether forced or emergency performance issue outages, are excluded from the 10 business days' notice period for OTR submission.

10.1. Emergency Performance Issue Outage

An emergency outage is an unplanned outage that is requested by the System Participant or the Power System Controller due to a potential impact to system security (SCTC 6.5.1). Where the risk to safety or system security is identified as immediate, System Participants must notify the System Control Hudson Creek Control Room via phone immediately. The Power System Controller will direct instructions to adjust dispatch and/or remove from service. The System Participant must submit an OTR as soon as practical after the risk is managed.

Emergency performance issue outages may often result in a generation unit curtailment or constraint being applied, not necessarily taken offline. The treatment will be determined by the Power System Controller based on system security risks and system conditions.

An emergency performance issue outage OTR is required for generator plant that is not performing at its registered minimum stable load or base capacity, not following the dispatch target issued by Electricity and Market Reform, or which is identified as non-compliant for forecasting accuracy (refer to Generator Forecasting Compliance Procedure).

10.2. Forced Outage

A forced outage is classified as an unplanned outage because of an unplanned disconnection from the system (trip or emergency-controlled shutdown), or if the plant fails to start and/or synchronise to the power system when called into service. This definition also includes outages of associated assets that may lead to generation unavailability, such as the node, unit transformer, or unit circuit breaker (CB).

10.2.1. Forced outage of a generation plant

For forced outages at generation plants, the Generator must notify the System Control Hudson Creek Control Room via phone immediately of the known or likely cause, and that the plant is to be considered unavailable. Following verbal communication, the Generator must submit an OTR formally communicating the details using the worst-case duration of the outage while the fault / cause of the outage is under investigation.

When subject to an unplanned outage, isolation, inspection, and repair work on a generation plant involved in a forced outage can commence following verbal agreement with the Power System Controller; it is unnecessary to wait for email approval of an OTR.

10.3. Extension of unplanned outage

A System Participant must submit a revised OTR to the Power System Controller when any details in the approved OTR are altered. This includes changes or expansion of the work to be undertaken or revisions to online testing requirements.

A System Participant must resubmit an OTR as soon as possible when it foresees an unplanned outage extending beyond the previously approved date and time. The OTR must be submitted with the original OTR number and the reason for extension. Where possible, OTR extensions will be submitted prior to 12:00 PM on the outage end date of the previously approved OTR to be included in the market pre-dispatch.

10.4. Testing following Performance Issue or Forced Outage

It is the responsibility of the System Participant to conduct testing of its plant prior to return to service following Performance Issue or Forced Outages. In many cases this will involve synchronisation to the power

system and online testing. The System Participant must resubmit a revised OTR, referencing the assigned OTR number, with the details of the online tests to be performed at each desired testing output, including ramping actions.

10.5. Power System Controller unplanned outage treatment

When subject to an unplanned outage, isolation, inspection, and repair work on plant involved in a forced outage can commence following verbal agreement with the Power System Controller, it is not necessary to wait for approval of an OTR. However, at no time should testing or synchronising occur without the OTR approval and verbal authorisation from System Control Hudson Creek Control Room is received.

The Power System Controller will approve the OTR for forced outages as soon as practical by emailing the approved OTR. Out of hours, a forced outage response will not be accompanied by a Risk Notification. Formal Risk Notifications will be issued for forced outages by the following business day if the outage is likely to exceed 24 hours or involves changes to system conditions or constraints. In all instances, immediate changes to dispatch instructions and system conditions will be communicated via the control room.

When a System Participant requires testing of plant prior to return to service, the Power System Controller will accommodate OTR's for testing, with prioritisation given to planned testing and switching activities, unless power system security or reliability risks require prioritisation of returning the equipment under unplanned outage priority. Timeframes for the Power System Controller's assessment of testing requirements will depend on the outage cause, remedial actions taken while out of service, and requirements of the testing activities. In most circumstances, low risk changes or testing will be approved following a forced outage by the following business day, but higher risk testing following forced outages that have required significant rectification work will require a longer assessment period. For example, if the works require setting changes, or will affect the performance of the generating unit and therefore require compliance or R2 validation testing, then significant engineering assessment or planning will be required. As with planned online testing, unplanned online testing will require system load and conditions to be met and wait times should be expected.

11. Return to Service

11.1. Return to Service Submission

All planned or unplanned outages require a return to service (RTS) application form to be submitted to the Power System Controller when works are complete and the plant is ready to be returned to service.

The System Participant must include the OTR number provided when the outage was approved, the likelihood of the machine tripping, the cause identified and/or details of work undertaken, results of testing undertaken, and any operational restrictions to be applied.

Once an RTS form is submitted, System Participants must phone System Control Hudson Creek Control Room to confirm System Control's requirements have been met and receive advice on when the generating unit is likely to be called into service.

An RTS notification is not required in certain circumstances, including:

- Units undergoing commissioning or compliance testing.
- Units on an extended Forced Outage (FO) where testing is required. In these cases, an RTS is not required upon completion of testing, as the unit will remain on FO.

11.2. Return to Service Approval Assessment

The RTS form must be submitted and approved prior to the plant being synchronised or connected to the power system, declared available for service, or considered for standby reserve.

The Grade 2 Power System Controller will not approve the RTS where the submission is incomplete or where it is not satisfied that the risks of tripping have been adequately addressed.

The Grade 2 Power System Controller is responsible for RTS approval. Where additional information or assessment is required, the Controller may defer approval authority to the System Control Outage Planning Team. In such cases, or where the Outage Planning team determines that RTS approval authority should reside with them, this must be clearly specified in the Risk Notice issued for the relevant outage.

12. OTR and RTS Distribution

OTR and RTS forms related to generation capacity are distributed to all participants registered in the relevant power system on approval by the System Controller. The information submitted by the generator as part of the OTR or RTS form lodgement is included as part of this circulation. If a generator considers information accompanying their submission to be confidential, then they must advise of the sensitivity within the email body rather than the form itself.

13. Communication Methods

- All generation outage and testing requests are to be submitted via the Power System Controller's nominated Generation Outage Testing Request tool.
- All network outage and testing requests are to be submitted via Power and Water's Request for Access tool.
- All return to service requests for generation are to be submitted via the Power System Controller's nominated Return to Service tool.
- Annual Plant Maintenance Forecasts and Preliminary Assessment Requests are to be submitted to the Operations Planning generic email address:

  SCOperationsPlanning.PWC@powerwater.com.au

  With the purpose of the email clearly stated in the email subject as "Submission of Annual Plant Maintenance Forecast" or "Request for Preliminary Assessment"
- Network access requests must be submitted to the PWC Network Performance generic email address:

  NetworkPerformance.PWC@powerwater.com.au
- For communication for other purposes, the primary methods of communication between a System Participant and System Control (Operations Planning and Real Time Operations divisions) will be determined by the applicable Operational Protocol in place between the two parties for the site/asset.

14. Review

This document is to be reviewed in accordance with changes to the System Control Technical Code and/or the Network Technical Code.

System Participants can submit proposals for amendment to this procedure in writing to the Power System Controller.

15. Document History

Date of Issue	Version	Prepared By	Description of Changes
27 April 2026	Draft 2.0	Mouhamad Chantaf	Procedure updated and transitioned to latest long form document template
22 October 2020	V1.0	Duncan Griffin	Approved following consultation
09 July 2020	Draft 0.1	Amelia Farmilo	Initial draft for consultation

Contact

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