

SERC White Paper on Planned Outage Coordination

The SERC participants are committed to providing safe, efficient, and reliable power to serve the electrical customers of the region. Coordinating planned outages of equipment connected to the grid is essential to meeting this objective. The following whitepaper was developed to provide assistance and guidance to SERC participants in enhancing their planned outage processes and procedures.

General

Each Transmission Operator (and/or Reliability Coordinator) should establish clearly defined procedures to receive and process outage information. Each SERC Sub-Region should have procedures both for coordinating outages within its Sub-Region and also for coordinating outages with neighboring Sub-Regions. The scope of the procedures should include the near-term activities of coordinating, communicating, and conducting outages, and also the longer-term activities of operational planning which include representing outages in regional models and transfer studies. Procedures should clearly define responsibilities for outage coordination and communications within each area, such as by assigning Outage Coordinator functions to particular groups.

For the purposes of this whitepaper, outages refer to planned or forced outages of elements on the Bulk Power System, 100 kV or above, and all tie line facilities. Planned outages refers to both those outage requests approved by the Transmission Operator and also those outage requests pending approval by the Transmission Operator, included to provide additional information further into the planning horizon.

The following sections show areas that should be addressed in Planned Outage Procedures.

Data

The NERC System Data Exchange (SDX) provides electronic access to up to date outage information. Known and probable outages should be uploaded into SDX for the 13 month Operational Planning window or longer.

- Transmission outages should be uploaded into SDX in accordance with NERC requirements. This information should be well maintained for accuracy. SDX records may be used by others in monthly and daily models (cases) and must be maintained to enable accurate transfer and reliability analyses. SDX information is also used in the IDC/TLR process.
- The “Common Name” field in SDX should be populated to aid other areas in identifying facilities that may impact their areas.
- Once available, the SDX “Status” field should be populated to differentiate between approved and pending requests.
- Procedures should define who is responsible to ensure that updates to SDX occur to reflect 1) canceled or denied requests, 2) equipment returned to service early, 3) rescheduled requests, 4) or extensions of outages.

Modeling

SERC participants utilize the VSTE (VACAR, Southern, TVA, and Entergy Reliability Agreements) process to develop regional models. Planned outages are included in the models based upon the input of the respective participants rather than simply uploading raw SDX data. This provides an extra review of long term outage data and allows outages to be included based upon their impact, relative likelihood, and other factors which may not be reflected in SDX data. Additional updates and sensitivities are performed by sub-groups of SERC participants to meet specific processes and needs, such as the monthly EST models developed by Entergy, Southern, and TVA.

- Transmission Providers build models and perform transfer analysis for at least a 13 month window to facilitate long-range OASIS postings. Operational Planning personnel (VASTE / OASIS Study Groups) develop models which include assumptions for future (pending) planned outages.
- Long-range planned outages should be entered in the SDX for consideration in transfer studies. This enables planned outages to be coordinated with planned outages on other systems and also with offerings of Available Transfer Capability (ATC).
- Each area should update changes to planned outages in SDX in a timely manner. This enables participants to perform sensitivities to new outages between modeling updates. It also allows needed capacity to be reserved and unneeded capacity to be released for other uses.

Outage Coordination List

The SERC OPS will develop and distribute an Outage Coordination List of facilities which are likely to affect neighboring systems and require coordination. The list will be updated on an annual basis. The list will include, but not be limited to:

- All Transmission Tie Line facilities as listed in the current year VSTE Base Case Master Tie-line list.
- Outaged Facilities creating a “limit” reported on the quarterly VASTE / OASIS Support Study - Coordinated Results Form,
- Other Transmission or Generation facilities known to create a significant impact on another system as defined by the affected systems.

The Outage Coordination List will also list a contact phone number for each affected element. The SERC member companies are responsible for ensuring that their respective affected elements are listed for each given outaged element.

SERC Outage Coordination List (example)

| Outaged Element | Owner | Outage Coordinator | Affected Elements | Owner | Affected Coordinator |
|-----------------|-------|--------------------|-------------------|-------|----------------------|
| Line A-B | GPC | NTCC | Bank X | TVA | TVA SE TO |
| Line A-B | GPC | NTCC | Line C-D | EES | EES TOC |
| Bank A | TVA | SE TO | Line Y-Z | GTC | GPC NTCC |

Outage Request Coordination

Within each SERC Sub-Region, each Transmission Operator and/or owner should have processes for receiving outage information and coordinating the evaluation and response with the groups affected. Evaluations should include local area

impact/coordination, wide area impact/coordination, and affected system(s) impact/coordination. Outage procedures should identify an Outage Coordinator, typically the Transmission Operator, to whom requests/notification should be made, and should also specify responsibilities for conducting the different evaluations, such as Operations Planning, System Control Reliability Coordination, etc.

Each SERC Sub-Region should establish processes with neighboring systems to coordinate planned outages for facilities on the Outage Coordination List. One approach is to utilize an Outage Coordinator as a single point of contact with an Affected Neighboring System. The Outage Coordinator would be responsible for ensuring that the proper parties internal to its reliability area are engaged in outage assessments and also for compiling responses to Affected Neighboring Systems. See Example A, "Regional Coordination Responsibilities for Outages Affecting Neighboring Systems".

- Procedures should encourage coordinators to schedule planned outages as far in advance as possible and include at least a 13 month outage window. Changes to requests should be treated similarly to new requests. Changes to previously coordinated outages should be re-evaluated with regard to the then existing snapshot of anticipated outages.
- Outages up to 3 days duration affecting neighboring systems should be entered in the SDX **a minimum of one week in advance.**
- Outages of 4-13 days duration should be entered in the SDX **a minimum of two weeks in advance.**
- Significant, long duration outages (2 weeks or greater) should be entered in SDX **a minimum of 30 days in advance.**
- This does not preclude scheduling either emergency or routine work with shorter notice on a direct contact basis by mutual agreement.
- Outages expected to affect transfer capability or wide area reliability should be forwarded to the responsible entities for analysis.
- Outages of facilities on the Outage Coordination List should be coordinated using Active Communication. Procedures should define contact points for outage requests impacting neighboring systems.

Active Communication Requirements

- 30 Days Out or more: The status of outages affecting neighboring systems should be communicated to the affected area Transmission Operator and Reliability Coordinator by email a minimum of **30 days in advance of the outage.**
- 7 Days Out or more: The status of outages affecting neighboring systems should be communicated to the affected area Transmission Operator and Reliability Coordinator by email or phone a minimum of **one week in advance of the outage.**
- Day Of: The initiation of outages affecting neighboring systems should be communicated that day to the affected area Transmission Operator and Reliability Coordinator by phone **a minimum of 30 minutes prior to switching.**
- Major Transmission Outages, typically those of longer duration (two weeks +) involving 230 and 500 kV equipment, should be posted on OASIS to provide information to transmission customers prior to the outage if possible. Other outages may also be posted based upon significant impacts to interfaces or generators.

Example A
Regional Coordination Responsibilities
for Outages Affecting Neighboring Systems

Outage Coordinator

Typically Transmission Control Center (TCC)
responsible for the facility outaged or impacted

30 Days Out or more

- Serve as the contact point for outages on internal facilities. Identify outage requests requiring coordination with neighboring systems. Initiate coordination of long duration projects and major impacts.
- Upload known outages into SDX.
- Notify Affected Neighboring System(s). (see Active Communication Requirements)
- Notify internal Operations Planning function to assess and determine whether to include the outage in monthly modeling.
- If approved, canceled, or rescheduled, notify Affected Neighboring System(s) and Operations Planning.
- The Outage Coordinator is responsible for notifying the contacts within his/her area including any affected Generators, Customers, or Transmission Owners.

For external outages (when yours is the affected system)

- Serve as the contact point for outages originating in neighboring systems and initiate coordination within your reliability area. In particular, notify Operations Planning to assess and determine whether to include outage in monthly modeling. Serve as the contact point for collecting concerns.
- Communicate response/concerns to originating neighboring system.

7 Days Out or more

- Serve as the contact point for outages on internal facilities. Identify outage requests requiring coordination with neighboring systems and initiate coordination.
- Upload known outages into SDX.
- Notify Affected Neighboring System(s). (see Active Communication Requirements)
- Notify Reliability Coordinator and Operations Planning. (see Active Communication Requirements)
- If approved, canceled, or rescheduled, notify Affected Neighboring System(s), Reliability Coordinator, and Operations Planning. (see Active Communication Requirements)
- The Outage Coordinator is responsible for notifying the contacts within his/her area including any affected Generators, Customers, or Transmission Owners.

For external outages (when yours is the affected system)

- Serve as the contact point for outages originating in neighboring systems and initiate coordination within your reliability area. Ensure Reliability Coordinator and Operations Planning personnel are notified. (see Active Communication Requirements) Serve as the contact point for collecting concerns.
- Communicate response/concerns to originating neighboring system.

Day Of

- Ensure that Affected Neighboring System(s) are notified a minimum of 30 minutes prior to switching. (see Active Communication Requirements)
- Ensure that Reliability Coordinator is notified a minimum of 30 minutes prior to switching. (see Active Communication Requirements)
- Implement outage and monitor system response. Notify Reliability Coordinator and Affected Neighboring System(s) of any concerns.
- The Outage Coordinator is responsible for notifying the contacts within his/her area including any affected Generators, Customers, or Transmission Owners.

For external outages (when yours is the affected system)

- Serve as the contact point for outages originating in neighboring systems and initiate coordination within your reliability area. Ensure that Reliability Coordinator is notified a minimum of 30 minutes prior to switching. (see Active Communication Requirements)
- Communicate response/concerns to originating neighboring system.

Operations Planning

30 Days Out or more

- Operations Planning will assess requests from a regional perspective and provide a timely response back to the Outage Coordinator (TCC). Operations Planning will coordinate with neighboring operations planning groups as required.
- If approved, canceled, or rescheduled, Operations Planning will update modeling and OASIS postings.

7 Days Out or more

- Operations Planning will assess requests from a regional perspective and provide a timely response back to the Outage Coordinator (TCC). Operations Planning will coordinate with neighboring operations planning groups as required.
- If approved, canceled, or rescheduled, Operations Planning will update modeling and OASIS postings.

Reliability Coordinator

7 Days Out or more

- Reliability Coordinator will provide a timely response back to the Outage Coordinator (TCC) regarding reliability area concerns. Reliability Coordinator will coordinate with neighboring Reliability Coordinators as required.

Day Of

- Reliability Coordinator will assess/monitor outage from a regional perspective based upon the latest system conditions

Regional Outage Coordination

