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|  California ISO RC West | Reliability Coordinator Procedure | Procedure No. | RC0320 |
| | | Version No. | 3.2 |
| | | Effective Date | 6/15/24 |
| Outage Review and Coordination | | Distribution Restriction: None | |

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Purpose

Provide guidelines on reviewing planned outages and RC Operational Planning Analysis (OPA) results for the next day; and communicating and coordinating any changes with BAs, TOPs and neighboring RCs to ensure that planned operations for the next day will respect SOLs and IROLs.

1. Responsibilities

- Reliability Coordinator Operator
- Transmission Operator
- Balancing Authority

2. Scope/Applicability

This procedure addresses the outage review and coordination process performed by the RC Operator after the completion of the RC West OPA process,¹ in preparation for next-day operations. The outage coordination process for the Operations Planning time Horizon in accordance with relevant requirements in NERC IRO-017 is addressed in RC West Outage Coordination Process.

3. Procedure Detail

3.1. Planned Transmission and Generation Outage Review


Each night, in collaboration with each BA and TOP in the RC Area, the RC operator will verify that outages listed in the Outage Management System [OMS]² for the next day represent the work that is actually planned. This includes BAs and TOPs that do not have outages in OMS, to ensure that there are no urgent or forced outages that have been overlooked for the next day. For BAs and TOPs that delegate these responsibilities, a verification by the delegate is sufficient.

Next-day outage verification is critical to determine if any adjustments to the RC OPA is needed due to any unanticipated changes to planned outages, status of BES facilities, RAS's, and non-BES facilities that impact the BES.³ This verification may be completed electronically without a phone call between the RC operator and each entity.


¹ The RC West OPA process is described in RC West RC0620 Operations Planning Analysis (Next Day).

² RC West Outage Management System (webOMS).

³ IRO-008-3 R1, R2.


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| Balancing Authority (for Generation Outages) or Transmission Operator (for Transmission Outages) Actions | |
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| <ul style="list-style-type: none"> Identify outages planned for the next day (D+1). As specified in RC West Operating Procedure RC0630 Outage Coordination Process, the following types of outages, 30 minutes or more in duration, that meet <u>any</u> of the following criteria are expected to be in RC West OMS: <ul style="list-style-type: none"> BES transmission and/or generation facilities outages as defined by NERC, BES generation derates of an individual unit or aggregate plant capacity by greater than 50 MW, BES/non-BES necessary for voltage control, BES Remedial Action Scheme (RAS), non-RAS automatic schemes, or protection systems when functionality is affected (i.e., when normal fault clearing zones are impacted) or Contingency definitions are impacted, BES generating unit Automatic Voltage Regulators (AVR), BES Power System Stabilizers (PSS) or BES alternative voltage controlling devices, Non-BES transmission or generation Facilities or equipment that are identified by the RC, TOP or BA as having an impact on the reliability of the BES, and Path or Facility TTC limits if part of an operating plan Telemetry Equipment that requires manual EMS or RTCA adjustment or communication channels impacting system protection that result in EMS alarms. Verify that outages listed in RC West OMS represent work that is actually planned for the next day. <ul style="list-style-type: none"> This may be done either by logging into the RC West OMS web user interface or reviewing an exported outage list sent by the RC operator. <p>Note: <i>This check is critical especially when an entity manages outages using a different outage management application. Sometimes, due to application issues, certain outages sent to OMS via a web service or Application Programming Interface (API) may not be properly registered in OMS. To ensure the list of outages in OMS represents what is actually planned, this verification must be completed.</i></p> Verify that the following information in RC West OMS is correct: <ul style="list-style-type: none"> Planned start time, Planned end time, Facility or equipment to be switched in or out, Facility Rating Changes. Determine whether there are any other facilities or equipment not in OMS scheduled to be switched out or derated. Notify the RC operator, using the Grid Messaging System (GMS), that the RC West OMS list is accurate; <u>or</u> call the RC operator by phone if there are discrepancies. | |

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| Balancing Authority (for Generation Outages) or Transmission Operator (for Transmission Outages) Actions |
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| <ul style="list-style-type: none"> • If there are no outages planned, <ul style="list-style-type: none"> ○ Notify the RC operator using GMS stating that no outages are planned. • Notify the RC operator if there are any anticipated issues due to weather, gas/fuel, capacity/reserve adequacy, etc. |

| Reliability Coordinator Actions |
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| <ul style="list-style-type: none"> • Retrieve transmission and generation outages in OMS scheduled to start the next-day (D+1). • Identify outages that, at a minimum, meet <u>any</u> of the following criteria: <ul style="list-style-type: none"> ○ BES transmission equipment outages, as defined by NERC, to be switched out of service, ○ BES generation outages as defined by NERC, ○ BES generation derates of an individual unit or aggregate plant capacity by greater than 50 MW, ○ BES Remedial Action Scheme (RAS), non-RAS automatic schemes, or protection systems when functionality is affected (i.e., when normal fault clearing zones are impacted) or Contingency definitions are impacted, ○ BES generating unit Automatic Voltage Regulators (AVR), BES Power System Stabilizers (PSS) or BES alternative voltage controlling devices, ○ Non-BES transmission or generation Facilities or equipment that are identified by the RC, TOP or BA as having an impact on the reliability of the BES, which will be switched out of service, and ○ Telemetry Equipment that requires manual EMS or RTCA adjustment or communication channels impacting system protection that result in EMS alarms. • Confirm, in coordination with the BA and TOP, that outages listed in OMS represent work that is actually planned for the next day. • Verify if there are any anticipated issues due to weather, gas/fuel, capacity/reserve adequacy, etc. • Resolve and Log any major discrepancies discovered during the review that are deemed critical to reliability. |

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3.1.1. Changes to Scheduled Outages

Any BA/TOP outages for the next-day (D+1) not in OMS or any changes to start or end time for scheduled outages in OMS need to be studied to ensure there are no adverse reliability impacts.

| Reliability Coordinator Actions |
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| <ul style="list-style-type: none"> • Ensure the BA/TOP submits new urgent/forced outages or changes to scheduled outages in OMS. • Request a study from RCOE to ensure the changes will not adversely affect reliable operations of the grid. • Ensure that an Operating Plan, Process or Procedure is in place for an identified IROL which may require actions the RC will take or direct others to take (up to and including load shedding),⁴ if the requested changes affect a pre-determined IROL. • Ensure requested changes are adequately coordinated with BAs/TOPs that are impacted or potentially impacted by the requested outages. • Approve the outage change request, if studies indicate that all SOLs and IROLs will be met. • Disapprove the outage change request if the requested changes will cause SOL or IROL exceedances without sufficient mitigation, or if impacted BAs/TOPs do not approve the outage. • Notify the impacted BA/TOP(s) by phone of the status. |

3.2. Calls with Neighboring RCs


At the beginning of the day shift, the RC operator will have a conference call with all RCs in the Western Interconnection to discuss:

- Major Path (Stability) limitations/outages with potential wide area impacts
- New or modified IROLs
- Major transmission outages with potential wide area impacts
- Major generation outages with potential wide area impacts
- Major RAS outages with potential wide area impacts
- Facility limits changes with potential wide area impacts
- Adverse weather or system conditions
- Any other significant issues

3.3. Regional Conference Calls

To ensure situational awareness of all potentially affected entities, the RC operator will have a conference call with the Pacific Southwest group and Pacific Northwest group, on an ad-hoc basis, to discuss anticipated significant system conditions that impact the region.

⁴ IRO-009-2 R1

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The regional conference call will be initiated by the RC Operator when a significant issue that affects the region is identified from the nightly outage and OPA results review, or for issues identified during Real-time operations. When the RC operator determines that a conference call should be initiated, the call will be conducted as follows:

- **Pacific Northwest Call** at 0300 PPT (0400 MPT) by the RC West North Desk operator.
- **Pacific Southwest Call** at 0400 PPT (0500 MPT) by the RC West South Desk operator.

RC West will share the Daily RC report with all reliability entities prior to the calls. The report will include a daily condition status indicator, based on RC assessment of projected conditions for the next day.

In addition, if extreme weather is forecasted for the next day, with a potential for energy or capacity concerns, RC West Operations Management will initiate a conference call during business hours with the Operations Managers for the BAs in the affected region to discuss anticipated conditions. Prior to this call, RC West may request each BA to provide forecast information, such as: expected peak/all-time peak MW load, forecasted Contingency Reserve Obligation/MSSC, major transmission outages that limit imports, if the BA anticipates use of demand response, if the BA anticipates to be in any EEA level, etc.

| Reliability Coordinator Actions |
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| <ul style="list-style-type: none"> • Post the Daily RC System Report on the RC Portal prior to the call(s). • Notify all BAs and TOPs in the RC Area via GMS of the posting. • Determine whether a call should be initiated for the Pacific Northwest region or the Pacific Southwest region to discuss significant anticipated system conditions. Possible reasons for initiating the call include: <ul style="list-style-type: none"> ○ Major scheduled transmission or generation outage - <ul style="list-style-type: none"> ▪ Impacts an IROL in the region ▪ Impacts a Stability or Major WECC path in the region ▪ OPA indicates potential SOL exceedance requiring coordination of mitigation from multiple entities ○ Major Forced Outages that change OPA results (after publishing) or may trigger cancellation of other scheduled outages in the region. ○ Major RAS Outages with potential wide-area impact (e.g. WECC-1 RAS, etc.) ○ Potential capacity issues/EEA ○ Restricted maintenance operation/no-touch with potential wide-area impact ○ Extreme weather in the forecast, such as: <ul style="list-style-type: none"> ▪ Storms ▪ Wildfire ▪ Unusually high/low temperatures ▪ High Winds ▪ Tsunamis/tornadoes ○ Any other significant issues identified by the RC ○ A BA or TOP may also request the RC to initiate a call based on any significant issues with potential wide-area impact. • If it is determined that a call should be initiated: <ul style="list-style-type: none"> ○ Send a GMS message to all parties 30 minutes before start of the conference call. |

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| Reliability Coordinator Actions | |
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| <ul style="list-style-type: none"> ○ Initiate conference call with the parties in the region at the scheduled time. ○ Discuss the anticipated significant system condition(s). ○ Request BAs/TOPs to mention any changes or additions to the significant system conditions reported by the RC Operator. | |
| <ul style="list-style-type: none"> ● Log a summary of the conference call. | |

4. Supporting Information

Operationally Affected Parties

Shared with the Public.


References

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| NERC Requirements | IRO-002-7 R5; IRO-008-3 R1, R2, R5; IRO-009-2 R1 |
| BA/TOP Operating Procedure | |
| Other References | RC West Outage Coordination Process RC West Operations Planning Analysis (Next Day) |


Definitions

The following terms capitalized in this Operating Procedure are in accordance with the NERC Glossary, and/or otherwise when used are as defined below:

| Term | Description |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remedial Action Schemes (RAS) | <p>A scheme designed to detect predetermined System conditions and automatically take corrective actions that may include, but are not limited to, adjusting or tripping generation (MW and Mvar), tripping load, or reconfiguring a System(s). RAS accomplish objectives such as:</p> <ul style="list-style-type: none"> ● Meet requirements identified in the NERC Reliability Standards, ● Maintain Bulk Electric System (BES) stability, ● Maintain acceptable BES voltages, ● Maintain acceptable BES power flows, and ● Limit the impact of Cascading or extreme events. |

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| Term | Description |
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| System Operating Limit (SOL) | <p>The value (such as MW, Mvar, amperes, frequency or volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to:</p> <ul style="list-style-type: none"> • Facility Ratings (applicable pre- and post-Contingency Equipment Ratings or Facility Ratings), • Transient stability ratings (applicable pre- and post-Contingency stability limits), • Voltage stability ratings (applicable pre- and post-Contingency voltage stability), and • System voltage limits (applicable pre- and post-Contingency voltage limits). |
| Interconnection Reliability Operating Limit (IROL) | A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System. |
| Reliability Coordinator (RC) Area | The collection of generation, transmission, and loads within the boundaries of the Reliability Coordinator. Its boundary coincides with one or more Balancing Authority Areas. |
| Protection System | <p>Protection System –</p> <ul style="list-style-type: none"> • Protective relays which respond to electrical quantities, • Communications systems necessary for correct operation of protective functions, • Voltage and current sensing devices providing inputs to protective relays, • Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply), and • Control circuitry associated with protective functions through the trip coil(s) of the circuit breakers or other interrupting devices. |
| Operational Planning Analysis (OPA) | <p>An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to:</p> <ul style="list-style-type: none"> • Load forecasts; • Generation output levels; • Interchange; |


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| Term | Description |
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| | <ul style="list-style-type: none"> Known Protection System and Special Protection System status or degradation; Transmission outages; Generator outages; Facility Ratings; and Identified phase angle and equipment limitations. <p>(OPAs may be provided through internal systems or through third-party services.)</p> |
| RCOE | Reliability Coordinator Operations Engineer |
| Near-Term Transmission Planning Horizon | The transmission planning period that covers Year One through five. |
| Non-IROL Stability Limit | A path or cut-plane with transient or voltage stability limitation, which is not classified as an IROL. |

Version History

| Version | Change | Date |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1.0 | Approved by Steering Committee | 9/26/18 |
| 1.1 | Updates to sections 3.2 and 3.3 to streamline process for conducting nightly conference calls. | 1/16/19 |
| 1.2 | Updated to include NW Pacific Conference call. Replaced CAISO RC with RC West throughout. | 11/01/19 |
| 2.0 | Rewrote Section 3.3 and added new sub-section 3.3.2: Changed Pacific Northwest call from a daily call to an ad-hoc call, which is initiated only when a significant issue is identified for discussion. Minor format and grammar updates. Reviewed by RTWG on 2/18/19. | 2/19/20 |
| 3.0 | Rewrite of Section 3.3 - Changed Pacific Southwest call from a daily call to an ad-hoc call, which is initiated only when a significant issue is identified for discussion. Both regional conference calls now held on an ad-hoc basis. | 7/01/20 |
| 3.1 | Periodic Review: Section 3.1: Updated to better describe review process. Reference Section: Updated NERC Requirement IRO-002 reference. Minor format and grammar edits. | 8/04/22 |
| 3.2 | Section 3.3: Added language for condition status indicator in RC Daily report, and a policy for RC management to initiate conference calls with entities when extreme weather is forecasted for the next day. Prior to this call, BAs may be requested to provide forecast information. Updated version for NERC Standard IRO-008 references. | 6/15/24 |

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5. Periodic Review Procedure

Review Criteria & Incorporation of Changes

There are no specific review criteria identified for this document.

Frequency

Review at least once every three years.

Appendix

No references at this time.