
	Reliability Coordinator Procedure	Procedure No. RC0690
		Version No. 1.1
		Effective Date 1/18/24
PRC-012 Remedial Action Schemes		Distribution Restriction: None

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1. Purpose

To ensure that Remedial Action Schemes (RAS) do not introduce unintentional or unacceptable reliability risks to the Bulk Electric System (BES) RC West will follow the processes identified in this procedure.

2. Responsible Entities

- Reliability Coordinator (RC) - RC West
- Planning Coordinator
- RAS Entity - the Transmission Owner, Generator Owner, or Distribution Provider that owns all or part of a RAS
- Lead RAS - Entity is a RAS Entity (either individually or by agreement through the RAS Entities) that the power system studies, corrective action plans, review of RAS operations, etc. are submitted to RC West. This method is preferred but can also be submitted individually for review.
- WECC Remedial Action Scheme Review Subcommittee (RASRS)
- Adjacent Reliability Coordinators

3. Terms and Definitions

The RAS definition is contained in the NERC Glossary of Terms.¹ Details on the RAS definition can be found on the NERC website.²

RAS classification: A “limited impact” RAS is recognized as one for which it is not possible by inadvertent operation or failure to operate, to cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.


- For new or functionally modified RAS reviewed by the RCs under PRC-012-2, the Lead RAS-Entity can identify the proposed RAS as “limited impact” on the submittal checklist in procedure RC0690A. RC West will make the final determination as to whether a RAS is “limited impact” based on review results.

¹ https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf

² www.nerc.com/pa/Stand/Stand%20Prjct201005_2SpclPrctnSstmPhs2%20FAQ_RAS_Definition_0604_final.pdf

Entities can refer to WECC guidelines to classify RAS as limited impact, but if an entity would like to put a limited impact RAS, prior coordination with the RC would be helpful.

<https://www.wecc.org/Reliability/Western%20Interconnection%20RAS%20Review%20Guideline.pdf>

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- A RAS implemented prior to the effective date of PRC-012-2 that have been through the regional review process and designated as a Local Area Protection Scheme (LAPS) will be recognized as limited impact for the purposes of Requirement 4, Parts 4.1.3 and 4.1.4. The RAS database will have a determination of the existing RAS as “limited impact” before the effective date. RAS entities can propose new “limited impact”³ designations through RC0690A and RC West will verify the “limited impact” designation.

A “functional” modification to a RAS or a “functionally modified RAS” includes any of the following:

- Changes to System conditions or contingencies monitored by the RAS
- Changes to the actions the RAS is designed to initiate
- Changes to the RAS hardware beyond in-kind replacement (i.e., match the original functionality of existing components)
- Changes to the RAS logic beyond correcting existing errors
- Changes to redundancy levels; i.e., addition or removal

RAS operational performance analysis shall be considered for such conditions as:

- Appropriately triggered
- Respond as designed
- Effective to mitigate conditions
- No adverse BES response

4. Procedure


4.1 RAS Database

RC West will maintain a spreadsheet that contains all the RAS database-required elements³ for RC West footprint and seams (boundaries with other RCs). This database will be stored in the RC Portal as the RAS Database library and serve as a summary of all RASs. RAS Entities that are not RC West customers (BA or TOP) may submit information to their TOP who will upload to the RC Portal. RAS Entities that are not RC West customers may receive information from their TOP that was uploaded to the RC Portal. If there are any questions or concerns regarding this information, please contact RC West at ISORC@caiso.com.

RC West will review and update a RAS database containing, at a minimum, the information in Attachment 3 at least once every twelve (12) full calendar months.⁴ The review will be

³ Att 3 to the PRC-012-2

⁴ PRC-012-2 R9

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documented via the RC Portal via the RAS Review library. This library will contain the RAS review, RAS event when deficiencies are identified, and RAS Corrective Action Plans (CAPs).

4.2 RAS Review

- No initial evaluation is required for RAS existing on the effective date of this standard within the entity’s planning area. For existing RAS, initial performance of obligations under Requirement R4 must be completed within five (5) full calendar years of the effective date of PRC-012-2. For a new or functionally modified RAS, the initial performance of Requirement R4 must be completed within five (5) full calendar years of the date that the RAS is approved by the reviewing RC(s) under Requirement R3.⁵
- A full calendar year provides the entity with the remainder of the current year plus a full year afterwards. For example, a full calendar year beginning July 1 would include the remainder of the current year and all of the next year ending December 31.
- Initial RAS Review, RAS Modifications, and RAS Retirements⁶
 - The Lead RAS-Entity is required to submit RAS documentation for RC review and receive approval prior to:
 - Initial installation and commissioning of a RAS,
 - Functional modification of a RAS including in the event of a failure. RAS repairs that do not involve functional changes do not require further review, or
 - Removal of a RAS from service.
 - Minimum information required for RAS review is in RC0690A, the RAS Review Checklist. Responses of “Not Applicable” are acceptable when individual items are not pertinent to the specific RAS or situation.
 - For a RAS that involves more than a single RAS-entity, it is acceptable for the Lead RAS-Entity to submit a joint Attachment 1 that clearly indicates the RAS entities participating in and submitting the attachment. Alternatively, a separate Attachment 1 for each RAS entity is also acceptable.
 - Any new RAS or functional modifications to an existing RAS (see [Section 3](#) for the definition of functional modification) must be submitted to the RC West by the Lead RAS-Entity via the RC Portal’s RAS Review library.
 - RAS entities will provide information on whether the RAS has multi-RC impact or whether RASRS has to be involved into a review via operating procedure RC0690A. RC West will coordinate review with the RASRS as well as the Lead RAS-Entity depending on the multi-RC impact or whether there are further questions.
 - RC West shall complete the RAS review and provide written feedback within one (1) full calendar month of the receipt of the RC0690A Submittal Checklist, unless RC West and the Lead RAS-Entity agree to a different schedule. RC West will

⁵ Implementation Plan: https://www.nerc.com/pa/Stand/Prict201005_3RmdialActnSchmsPhase3ofPrctnSystmsDL/PRC-012-2_Implementation_Plan_clean_04182016_final.pdf

⁶ PRC-012-2 R1

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coordinate with WECC RASRS for their four weeks review of documentation prior to their next meeting. The schedule modification request shall be sent to the Lead RAS-Entity no later than five business days after the submission. The Lead RAS-Entity will review the schedule modification request and respond within ten (10) business days with approval or rejection of schedule modification.⁷


- Any new or modified RAS must submit updated modeling documentation in accordance with the IRO-010 request (RC0120A).
- Dated reports, checklists, or other documentation detailing the RAS review, and the dated communications with the RAS-entity will be maintained via the RC Portal. Each RAS will have a designated RAS Submitter in the RAS Database, which should be the sole submitter of documents; other impacted entities can be granted access to read files uploaded on that RAS. These impacted entities will be granted access by the RAS Submitter and/or RC West. RC West will approve documentation through a free-form text field in the RC Portal or through an official letter from isorc@caiso.com. The notification system through the RC Portal is being tested for implementation; if not feasible, emails will be used and uploaded to the RC Portal.
- The RC review is not limited to the checklist items and the RC may request additional information on any aspect of the RAS. If a checklist item is not relevant to a particular RAS, it should be noted as “Not Applicable.” If any reliability issues are identified during the review, the proposed resolutions for each reliability issue should be documented in addition to the applicable Attachment 2 items, and included in the written feedback to each RAS entity. Written feedback should be sent even if no reliability issues are identified for the RAS. Feedback from the RC’s review that no reliability issues were identified is synonymous with approval of the RAS.⁸
- Documented review of the RAS will be posted / communicated via the RC Portal’s RAS Review library.
 - If the RAS is approved, RC West will make changes to the database and communicate via the RC Portal notification to the RAS owner.
 - If reliability issues were identified, RC West will document the RAS review feedback and issues and will communicate via the RC Portal notification to the RAS owner
 - Once reliability issues are corrected,⁹ the Lead RAS-Entity will submit the revised RAS documentation to RC West
- Periodic RAS Reviews - Evaluations¹⁰
 - The PC should communicate periodic review results to the RC by submitting to the RC Portal’s RAS Review library.
 - RC West will follow the previous review timeline for the RC West review process.

⁷ PRC-012-2 R2

⁸ PRC-012-2 R2

⁹ PRC-012-2 R3

¹⁰ PRC-012-2 R4

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4.3 RAS Events¹¹

- The Lead RAS-Entity will provide results of the RAS operational performance analysis when deficiencies are identified via the RC Portal’s RAS Review library. The operational performance analysis results must be submitted within 120 full calendar days of the operation or failure to operate.
- The Lead RAS-Entity may ask RC West to extend the analysis period beyond 120 days, by submitting a request through CIDI or by emailing ServiceDesk@caiso.com if the user does not have CIDI access. RC West will respond to this request within five business days.
- If the results of the RAS operational performance analysis identify any deficiencies, the Lead RAS-Entity will submit a CAP to RC West via the RC Portal’s RAS Review library. See CAP section for details.

4.4 Corrective Action Plans¹²

- Each RAS entity that participates in developing a Corrective Action Plan (CAP) shall submit the CAP to its reviewing RC (s) within six (6) full calendar months of:
 - Date of the triggering event, or
 - Notification of RAS deficiencies by a Planning Coordinator¹³ (R4), or
 - Notification date the RAS entity notified RC West of a deficiency through the RAS operational performance analysis¹⁴ (R5), or
 - Date of the functional test that identified a deficiency¹⁵ (R8)
- RC West will receive CAP submissions for all RAS deficiencies and the date of the triggering event. The RAS deficiency may require the RC or Transmission Operator to impose operating restrictions so the System can operate in a reliable way until the RAS deficiency is resolved.
- A full calendar month provides the entity with the remainder of the current month plus a full month afterwards. For example, two full calendar months beginning from July 1 would include the remainder of July, all of August, and end September 30.
- All CAPs and revisions to CAPs must be submitted via the RC Portal’s RAS Review library.
- Minimum information to include in the CAP is detailed in RC0690C, the RAS CAP Checklist.
- Each RAS entity, whose facilities are in the RAS as requiring modification, is responsible for participating in developing the updated CAP. Collaboration by all RAS entities on a single CAP is acceptable and encouraged. For compliance purposes, each RAS entity may document its participation in the CAP and its provision to the reviewing RCs. Alternatively, individual RAS entities may choose to produce separate CAPs, and provide those separate CAPs to the RC.


¹¹ PRC-012-2 R5

¹² PRC-012-2 R6

¹³ PRC-012 R4

¹⁴ PRC-012 R5

¹⁵ PRC-012 R8

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- Evidence, such as an acknowledgment or affidavit, that the CAP was implemented as documented will be submitted by the RAS entity¹⁶ via the RC Portal’s RAS Review library.
- If actions or timetables on the existing CAP changed, the RAS entity will update each RAS-related CAP, and notify RC West of such updates within five business days via the RC Portal.
- The RAS entity will notify RC West via the RC Portal when the CAP is completed. If an operating restriction is implemented due to the deficiency, this will remain until RC West has received notification that the CAP is completed.

5. Supporting Information

Operationally Affected Parties

Shared with the Public.

References

NERC Requirements	PRC-012
BA/TOP Operating Procedure	
Other References	

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
None	

Version History

Version	Change	Date
1.0	Initial Procedure – approved by Oversight Committee 9/17/20.	1/01/21
1.1	Periodic Review: No content changes, only minor formatting.	1/18/24

¹⁶ PRC-012-2 R7

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6. 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 (3) years.

Appendix

No references at this time.