

CIP-014-1 – Physical Security

As a result of recent sabotage incidents at Metcalf and other substations, a new NERC CIP—014-1 physical security standard has been developed. The purpose of this standard is

3. Purpose: To identify and protect Transmission stations and Transmission substations, and their associated primary control centers, that if rendered inoperable or damaged as a result of a physical attack could result in widespread instability, uncontrolled separation, or Cascading within an Interconnection.

The standard is expected to become effective around the first of 2015.

The standard has a cookbook approach to determine which substations this standard applies to (all 500 kV substations are in, large 230 kV stations in if they meet a certain weighted value based on the number of lines they terminate, 115 kV stations are out). Each transmission owner must perform risk assessments if these applicable transmission stations become inoperable. These risk assessments must be done within 60 days reviewed by an unaffiliated third party. If a TO has identified at least one station in previous assessments that could cause physical security issues, it must repeat these studies within 30 months. If the TO's did not identify any physical security issues in previous assessments, it must repeat its complete assessment every 60 months.

The third party reviewer duties are defined as follows in the standard:

R2. *Each Transmission Owner shall have an unaffiliated third party verify the risk assessment performed under Requirement R1. The verification may occur concurrent with or after the risk assessment performed under Requirement R1.*

2.1. *Each Transmission Owner shall select an unaffiliated verifying entity that is either:*

- *A registered Planning Coordinator, Transmission Planner, or Reliability Coordinator; or*
- *An entity that has transmission planning or analysis experience.*

2.2. *The unaffiliated third party verification shall verify the Transmission Owner's risk assessment performed under Requirement R1, which may include recommendations for the addition or deletion of a Transmission station(s) or Transmission substation(s). The transmission Owner shall ensure the verification is completed within 90 calendar days following the completion of the Requirement R1 risk assessment.*

2.3. *If the unaffiliated verifying entity recommends that the Transmission Owner add a Transmission station(s) or Transmission substation(s) to, or remove a Transmission station(s) or Transmission substation(s) from, its identification under Requirement R1, the Transmission Owner shall either, within 60 calendar days of completion of the verification, for each recommended addition or removal of a Transmission station or Transmission substation:*

- *Modify its identification under Requirement R1 consistent with the recommendation; or*
- *Document the technical basis for not modifying the identification in accordance with the recommendation.*

2.4. *Each Transmission Owner shall implement procedures, such as the use of nondisclosure agreements, for protecting sensitive or confidential information made available to the unaffiliated third party verifier and to protect or exempt sensitive or confidential information developed pursuant to this Reliability Standard from public disclosure.*

Proposal:

ColumbiaGrid could assume the unaffiliated reviewing entity role for the security assessment in CIP-014, Requirement R1 for the planning participants that request it.

The reviewer role envisioned in CIP-014 is within ColumbiaGrid's expertise. ColumbiaGrid is tasked in the PEFA with performing an annual assessment of the participants' system ability to meet the NERC Planning Standards. ColumbiaGrid staff includes experienced transmission planners who are familiar with the performance of the NW system. They are capable to run appropriate studies and provide expert review of the utility. This proposal would provide utilities with competent review of their results and compliance with these NERC Planning Standards.

The requirements in the standard indicate that the reviewing entity should be:

- A registered Planning Coordinator, Transmission Planner or Reliability Coordinator or
- An entity that has transmission planning or analysis experienced.

Utility affiliates are not allowed to perform this review.

The CIP-014 Standard is a new standard and no one is providing these services at this time. Options to obtain this review include:

- Other Transmission Planners could provide a peer review of results for each other but this could be viewed as biased toward approval. A utility might not provide adequate and thorough review to improve the chances of the other utility approving their own assessment.
- A Transmission Planner could ask its Planning Coordinator to perform this function if the planner and coordinator are different entities. This may not be viable since most Transmission Planners are also their own Planning Coordinator.
- Other Planning Coordinators could provide a peer review of results for each other but this could be viewed as biased toward approval for the same rationale as the Transmission Planner described above.
- WECC could provide this service. Although these reviews would have more independence, they are unlikely to have the expertise and knowledge of the NW system.
- Peak RC could provide this service. They would likely have the expertise and knowledge of the NW system. Unsure at this time if this could be done within their charter.

ColumbiaGrid is an independent entity that should be able to provide an unbiased review.

DOES THE THIRD PARTY REVIEWER HAVE ANY COMPLIANCE RISK?

The compliance portion of the R2 standard appears to put the onus of compliance on the Transmission Owner. The Transmission Owner is responsible to incorporate any recommendations from the third party or justify why not, all within the prescribed schedules. The compliance requirement for third party review states are in the general format like “The Transmission Owner had an unaffiliated third party verify the risk assessment performed under Requirement R1 but did so in more than 90 calendar days.....”. If the third party does not complete the review in time, the Transmission Owner would not be in compliance and it is doubtful that the same third party would be asked to perform that role again.

WORKLOAD FOR COLUMBIAGRID:

A summary of the stations by owner is listed below.

The following list shows that number of stations that would fall under this standard (all 500 kV stations and the larger 345 and 230 kV stations). It is estimated that ColumbiaGrid members own about 85 stations that would fall under this standard. PacifiCorp and PGE own an additional 10 stations that would also qualify for this requirement in the ColumbiaGrid footprint. If a station has multiple voltages, it is only counted once. Many 230 kV stations are covered by their adjacent 500 kV facilities. If multiple ownership is involved, the owner of record is responsible for meeting the requirements although other owners should collaborate in the studies.

Company	Total	500 kV	345 kV	230 kV
Avista	1	0	0	1
BPA	75	63	2	10
Chelan	1	0	1	0
Douglas	1	0	0	1
Grant	1	0	0	1
PACW	5	5	0	0
PGE	5	2	0	3
Puget	3	1	0	2
Seattle	3	0	0	3
Tacoma	0	0	0	0
Total	95	71	3	21

New facilities that would qualify for these studies that are expected to be built in the subsequent 24 months must also be analyzed. Review the current ColumbiaGrid Ten Year Plan suggests that one new facility would be added in the next 24 months (Knight Substation). Two additional facilities would be added in the 2-5 year timeframe (Eastside and Castle Rock). As

this shows, the ongoing development of the system is not expected to add a significant amount of new facilities added to this requirement.

The initial Transmission Owner studies need to be performed by April 1, 2015. The review by an unaffiliated third party then needs to be completed within 90 days. This review includes a verification of the Transmission Owners risk assessment which may include recommendation for the addition or deletion of transmission stations. The Transmission owner then has 60 days to incorporate the third party review into its analysis and reporting.

Subsequent risk assessments shall be performed at least once every 30 calendar months for stations identified in a previous risk assessment as causing widespread instability, uncontrolled separation, or cascading within an Interconnection (Widespread Instability) and once every 60 months for stations have not been identified in previous risk assessments as causing Widespread Instability.

Review of 85 studies required by this new standard is estimated to require one ColumbiaGrid staff two to four weeks of time. This would mostly require review of the documentation provided by the Transmission Owners. There could be some study work involved if additional stations are suspected of needing to be added to the list and possibly spot checking assumptions and results. This would also include time to coordinate with the Transmission Owners with questions on study methodology and results.

Each 5 years, approximately 85 existing stations would need to be reviewed. It is not known at this time how many stations might be included in those that could result in Widespread Instability, as the studies have not been completed yet. Worst case is that all cause Widespread Instability and all of them have to be repeated every 30 months. A more realistic assumption would be that about 10% of the stations (8 to 9) would cause problems. Review of 8 to 9 stations in the intermediated studies would be expected to require 1-2 weeks to review.