NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Note: an Interpretation cannot be used to change a standard.

Request for an Interpretation of a Reliability Standard
Date submitted: 02/06/09
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Identify the standard that needs clarification:
Standard Number: CIP-005-1
Standard Title: Cyber Security -- Electronic Security Perimeters
Identify specifically what needs clarification (If a category is not applicable, please leave it blank)**:**

Requirement Number and Text of Requirement: CIP-005-1 4.2.2 and R1.3

4.2. The following are exempt from Standard CIP-005:

4.2.2 Cyber Assets associated with communication networks and data communication links between discrete Electronic Security Perimeters.

R1.3. Communication links connecting discrete Electronic Security Perimeters shall not be considered part of the Electronic Security Perimeter. However, end points of these communication links within the Electronic Security Perimeter(s) shall be considered access points to the Electronic Security Perimeter(s).

Clarification needed:

4.2.2 indicates that the communication links between ESPs and the required supporting equipment are not in the scope of this standard. However, in R1.3, the endpoints of a communication link between ESPs are required to be treated as "access points".

Regarding 4.2.2:

- What kind of cyber assets are referenced in 4.2.2 as "associated"? What else could be meant except the devices forming the communication link?
- Is the communication link physical or logical? Where does it begin and terminate?

Regarding R1.3:

- Please clarify what is meant by an “endpoint”? Is it physical termination? Logical

Request for an Interpretation of a Reliability Standard

termination of OSI layer 2, layer 3, or above?

- If “endpoint” is defined as logical and refers to layer 3 and above, please clarify if the termination points of an encrypted tunnel (layer 3) must be treated as an “access point? If two control centers are owned and managed by the same entity, connected via an encrypted link by properly applied Federal Information Processing Standards, with tunnel termination points that are within the control center ESPs and PSPs and do not terminate on the firewall but on a separate internal device, and the encrypted traffic already passes through a firewall access point at each ESP boundary where port/protocol restrictions are applied, must these encrypted communication tunnel termination points be treated as "access points" in addition to the firewalls through which the encrypted traffic has already passed?

Identify the material impact associated with this interpretation:

The material impact is potential non-compliance with the standard as written.

Many utilities have multiple control centers with fail over features between the facilities, and the communication links protected by encryption mechanisms such as VPN. Requiring all VPN termination points to also be access points introduces the requirement for strong authentication at the access point, increases complexity in network access controls and thus heightens probabilities of unintended failures, and will negatively impact real-time fail over functionality between control centers.

In addition, PacifiCorp is concerned regarding potential conflict with the published answer to Question #15, in the CIP-002-009 FAQ, "*Encryption or other data integrity checking technologies can also ensure that data is not changed in transit…*"

The following industry entities have a shared interest with PacifiCorp in this clarification request:

- Idaho Power
- Puget Sound Energy
- Platte River Power Authority
- Eugene Water & Electric Board
- Seattle City Light
- Arizona Public Service
- Bonneville Power Administration
- TransAlta
- Xcelenergy

Project 2009-12: Response to Request for an Interpretation of CIP-005-1 Section 4.2.2 and Requirement R1.3 for PacifiCorp

The following interpretation of CIP-005-1 — Cyber Security — Electronic Security Perimeters was developed by the Cyber Security Order 706 SAR drafting team.

Requirement Number and Text of Requirement

Section 4.2.2 Cyber Assets associated with communication networks and data communication links between discrete Electronic Security Perimeters.

Requirement R1.3 Communication links connecting discrete Electronic Security Perimeters shall not be considered part of the Electronic Security Perimeter. However, end points of these communication links within the Electronic Security Perimeter(s) shall be considered access points to the Electronic Security Perimeter(s).

Question 1 (Section 4.2.2)

What kind of cyber assets are referenced in 4.2.2 as "associated"? What else could be meant except the devices forming the communication link?

Response to Question 1

In the context of applicability, associated Cyber Assets refer to any communications devices external to the Electronic Security Perimeter, i.e., beyond the point at which access to the Electronic Security Perimeter is controlled. Devices controlling access into the Electronic Security Perimeter are not exempt.

Question 2 (Section 4.2.2)

Is the communication link physical or logical? Where does it begin and terminate?

Response to Question 2

The drafting team interprets the data communication link to be physical or logical, and its termination points depend upon the design and architecture of the communication link.

Question 3 (Requirement R1.3)

Please clarify what is meant by an “endpoint”? Is it physical termination? Logical termination of OSI layer 2, layer 3, or above?

Response to Question 3

The drafting team interprets the endpoint to mean the device at which a physical or logical communication link terminates. The endpoint is the Electronic Security Perimeter access point if access into the Electronic Security Perimeter is controlled at the endpoint, irrespective of which Open Systems Interconnection (OSI) layer is managing the communication.

Question 4 (Requirement R1.3)
If “endpoint” is defined as logical and refers to layer 3 and above, please clarify if the termination points of an encrypted tunnel (layer 3) must be treated as an “access point? If two control centers are owned and managed by the same entity, connected via an encrypted link by properly applied Federal Information Processing Standards, with tunnel termination points that are within the control center ESPs and PSPs and do not terminate on the firewall but on a separate internal device, and the encrypted traffic already passes through a firewall access point at each ESP boundary where port/protocol restrictions are applied, must these encrypted communication tunnel termination points be treated as "access points" in addition to the firewalls through which the encrypted traffic has already passed?
Response to Question 4
In the case where the “endpoint” is defined as logical and is >= layer 3, the termination points of an encrypted tunnel must be treated as an “access point.” The encrypted communication tunnel termination points referred to above are “access points.”