> Itron white paper

Service-Limiting Functionality with OpenWay®

Katrina Hutchinson
Senior Product Manager

Introduction

The service-limiting functionality of the OpenWay CENTRON® meter allows a meter to be automatically and remotely disconnected if a preconfigured demand threshold is exceeded. When used in conjunction with the rest of the OpenWay system, this functionality can be used for demand control and response efforts.

The following information describes the service-limiting functionality of the OpenWay CENTRON meter.

Functionality Overview

The OpenWay CENTRON meter's service-limiting functionality disconnects the meter if the current interval demand exceeds one of three configured thresholds (as defined by the operating tier). The three operating tiers supported by the meter are:

- Normal
- Critical
- Emergency

As a part of the meter configuration process, the following items are defined:

- Thresholds for each tier
  - Normal, Critical, Emergency
- Time period to remain disconnected
  - One value is used for all tiers
- Reconnect process. This can be done automatically or through user interaction
- Number of disconnects allowed in a given time period
  - The *time period* is a global setting defined in OpenWay System Settings

Once installed, the meter operates in the Normal operating tier. When the meter registers with the OpenWay Collection Engine (CE), the CE stores an active tier record for the meter. Once an active tier is detected, the meter compares the present demand to the configured threshold every second. If at any time the current interval demand exceeds the configured threshold for the active tier, the meter initiates a disconnect command and remains in the disconnect state for the configured time period. The meter repeats the above operation until the number of permitted disconnects has been exceeded within the programmed time period. If this number is exceeded, service limiting is disabled until the start of the next time period.

At any time, a command can be sent from the CE down to the meter to change the tier from a Normal threshold to either Critical or Emergency; this command includes the time to remain in that tier. Upon receipt of the command, the meter changes the value being monitored to the configured threshold for that tier.

For example, if the meter is configured for five disconnect attempts in a 12-hour time period, after five disconnects the meter disables the service-limiting functionality until the start of the next 12-hour time period.

Service-Limiting Example

The figure below further explains the service limiting functionality.

In the graph, from time *T0* to *T1*, the meter is in the Normal tier and compares the present demand to the configured value of 100W.

At time *T1*, the meter receives a procedure to enter the Critical tier and stay in it that tier for two hours. The meter enters the Critical tier and logs an event to indicate the meter has had an active tier change. The threshold being monitored has now changed from 100W to 50W.

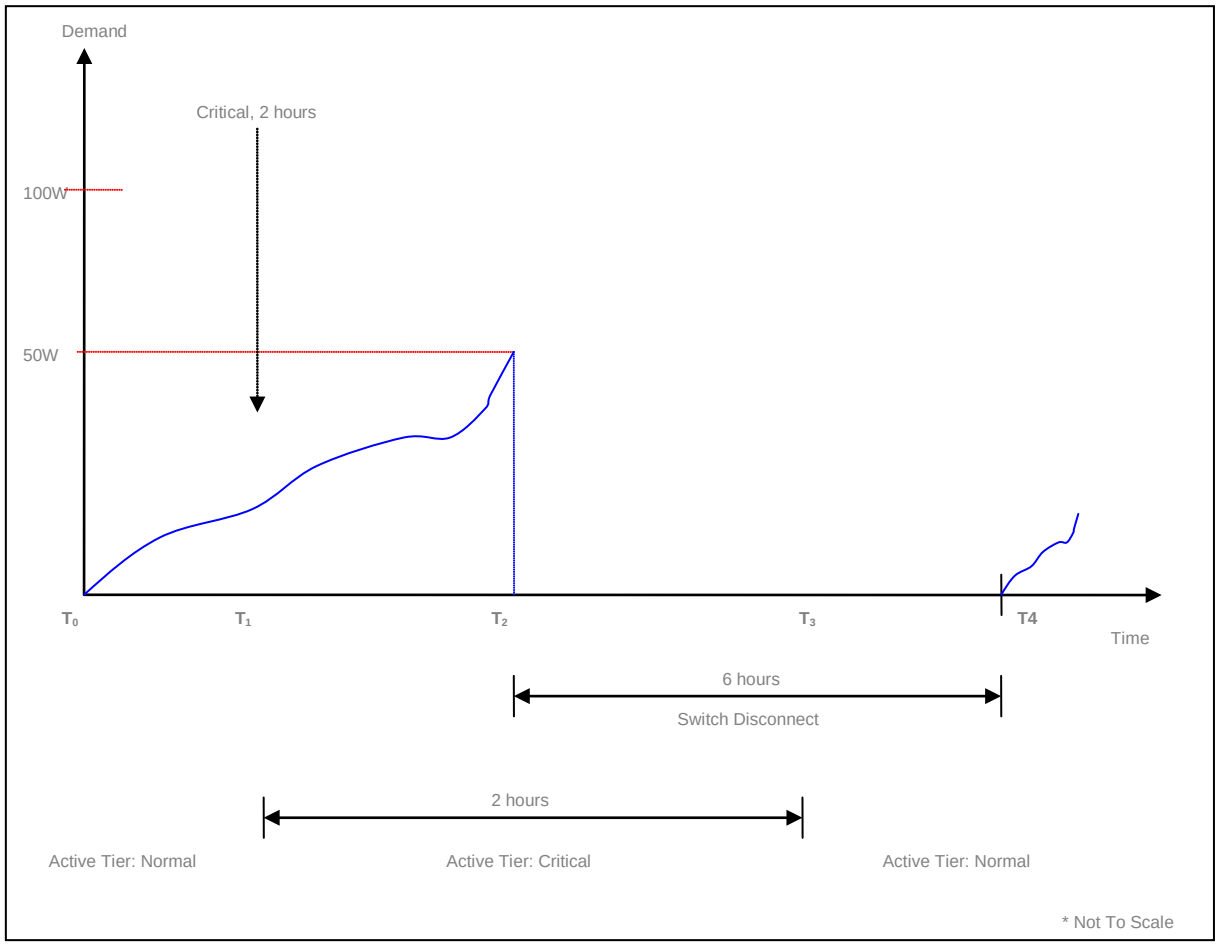
At time *T2*, present demand exceeds the configured threshold of 50W. As a result, the meter initiates a command to disconnect the relay. The meter will also log an event and alarm to indicate a disconnect has occurred.

At time *T3*, the meter exits Critical tier and goes back to Normal tier while remaining in the disconnect state.

At time *T4*, the meter initiates a command to reconnect the relay. The meter logs an event for meter reconnection and sends an exception alarm. As the tier was changed at time *T3* back to the Normal tier, the value being monitored is set back to 100W.

If the meter had been configured to arm the switch at time *T4*, the meter would not be reconnected until the reconnect button on the front of the meter is pushed.

OpenWay Service-Limiting Functionality Example



Conclusion

The service-limiting functionality of the OpenWay CENTRON meter provides an efficient and effective way to implement demand management and/or service limiting programs within your utility.

About Itron

At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our offerings include electricity, gas, water and heat meters; network communication technology; collection systems and related software applications; and professional services.

To realize your smarter energy and water future, start here: www.itron.com.

Itron Inc.
Corporate Headquarters
2111 North Molter Road
Liberty Lake, Washington 99019
U.S.A.
Tel.: 1.800.635.5461
Fax: 1.509.891.3355

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