

## EMERGENCY ELECTRIC PROCEDURES

### APPLICABILITY

In the event of an energy emergency which necessitates curtailment of electric service, Duke Energy Kentucky, Inc. may curtail electrical service to its customers in the manner set forth herein, either at its sole discretion, or under applicable policies, guidelines, directives or procedures issued by the East Central Area Reliability Council (ECAR), National Electric Reliability Council (NERC), the Midwest Independent Transmission System Operator, Inc. (Midwest ISO), or their successor organizations, or when required by the Kentucky Public Service Commission (Commission).

### PROCEDURES

#### I. General Rules Applicable to Energy Emergency

Emergency electrical procedures may be necessary in the event of electric supply shortages, transmission constraints, or other emergency conditions in the assigned service area of Duke Energy Kentucky, Inc. and/or outside the assigned service area of Duke Energy Kentucky, Inc.

An emergency means an anticipated or existing shortage in the supply of or constraint in the transmission or distribution of electrical energy, which cannot be avoided by market purchases of energy or transmission capacity and which has or may adversely affect the operation or reliability of generating or transmission and distribution facilities.

In the event of an emergency, Duke Energy Kentucky, Inc. may take any remedial measure that it deems reasonably necessary to alleviate the emergency condition or that may be required either by the Commission or under applicable policies, guidelines, directives or procedures issued by ECAR (including the then current revision of ECAR Document No. 3, Emergency Operations), NERC, the Midwest ISO, or their successor organizations, or Duke Energy Kentucky, Inc.'s emergency plan. During an emergency, Duke Energy Kentucky, Inc. will follow the procedures set forth herein with regard to essential customers as defined in section II, below. Duke Energy Kentucky, Inc. will take the remedial measures to alleviate the emergency conditions as set forth in section III, below.

#### II. Essential Customers

Essential customers are defined as follows:

- (A) hospitals and emergency care facilities, which shall be limited to those facilities providing medical care and performing in-patient surgery on patients;
- (B) federal, Commonwealth and county prisons and detention institutions;
- (C) police and fire stations, Kentucky national guard facilities, military bases, and federal facilities essential to the national defense;
- (D) "critical customers," which means any customer or consumer on a medical or life support system for whom an interruption of service would be immediately life threatening and who is enrolled in Duke Energy Kentucky, Inc.'s program for critical customers;
- (E) radio and television stations used to transmit emergency messages and public information broadcasts relating to emergencies;
- (F) water pumping plants essential to the supply of potable water to a community;
- (G) sewage plants essential to the collection, treatment or disposal of a community's sewage;

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## II. Essential Customers (Contd.)

- (H) emergency management and response facilities and the county-wide "911" system;
- (I) nursing homes;
- (J) central office telephone switching stations; and
- (K) blood banks.

Duke Energy Kentucky, Inc. does not guarantee a continuous and uninterrupted flow of power to any customer. Power interruptions may occur due to many causes other than the emergency procedures set forth herein. Further, essential customers should expect that their power may be interrupted in the event of an emergency due to the nature of the emergency and the normal configuration of electric supply systems.

Essential customers are responsible for anticipating the possibility that power may be interrupted and for developing contingency plans if continuity of service is essential. Such contingency plans may include installing on-site backup generation, uninterruptible power supplies, other alternative power sources or evacuation to another location.

Duke Energy Kentucky, Inc. will make reasonable efforts to maintain service to essential customers during an emergency and will attempt to minimize the time period of any interruption, when practical. Duke Energy Kentucky, Inc. may, however, curtail power to essential customers during an emergency. Duke Energy Kentucky, Inc. will attempt to identify essential customers and maintain a list of these customers for its load curtailment plans. Duke Energy Kentucky, Inc. will verify and update this list annually and review its curtailment rotation schedules in an attempt to minimize the number of essential customers affected by curtailment.

Residential customers may request to participate in Duke Energy Kentucky, Inc.'s program for critical customers. Residential customers requesting to participate in this program must initially obtain a Medical Certificate from a licensed physician as to the need for and use of life support equipment in their household and must submit the certificate to Duke Energy Kentucky, Inc. along with their request to enroll in the program.

Upon enrollment in the program, Duke Energy Kentucky, Inc. will notify the customer in writing of the customer's options and responsibilities during an interruption, such as the need for backup generation, uninterruptible power supplies, other alternative power sources or evacuation to another location. Duke Energy Kentucky, Inc. will also notify these customers that it cannot guarantee a continuous and uninterrupted flow of power. Duke Energy Kentucky, Inc. will annually verify the customers' eligibility to continue to participate in the program.

Any non-residential customer may apply to be considered an essential customer, provided they must notify Duke Energy Kentucky, Inc. in writing of this request and provide the specific reasons why they should be considered an essential customer. Duke Energy Kentucky, Inc. will respond in writing within ten days of receipt of the request informing the customer whether, in Duke Energy Kentucky, Inc.'s sole discretion, they will be classified as a non-residential essential customer. Non-residential essential customers are also encouraged to develop contingency plans for use during an emergency, such as the need for backup generation, uninterruptible power supplies, other alternative power sources or evacuation to another location.

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## **II. Essential Customers (Contd.)**

Essential customers should prepare to implement their contingency plans any time that Duke Energy Kentucky makes a public appeal for voluntary conservation, due to the possibility that Duke Energy Kentucky, Inc. may experience an emergency during such time that Duke Energy Kentucky, Inc. makes public appeals for voluntary conservation.

If Duke Energy Kentucky, Inc. has adequate advance notice that an emergency may occur, then Duke Energy Kentucky, Inc. will attempt to call critical customers to alert them of the possibility of a power interruption. Due to the frequently sudden onset of an emergency and the time necessary to contact all critical customers, Duke Energy Kentucky, Inc. may not be able to contact critical customers in advance of an emergency.

## **III. Remedial Measures in the Event of Emergency**

In case of an emergency, Duke Energy Kentucky, Inc. will exercise the following series of load reduction measures to match the load with available generation. These measures are arranged in order of severity of the measures necessary to alleviate the emergency conditions presented. In the case of a sudden or unanticipated emergency, the urgency of the situation may require Duke Energy Kentucky, Inc. to immediately implement the more severe measures.

### **Pricing Signals and Special Contracts**

Duke Energy Kentucky, Inc. offers a variety of pricing signals using approved tariffs and special contracts to encourage customers to reduce their load when generation is in short supply. Participating customers may elect to voluntarily reduce their demand based on the terms of these tariffs and contracts.

### **Internal Conservation**

Duke Energy Kentucky, Inc. will reduce its own energy consumption by instructing its employees to adjust thermostats, turn off lights and reduce other non-essential loads at Duke Energy Kentucky, Inc.'s facilities.

### **Voltage Reduction**

Duke Energy Kentucky, Inc. may reduce voltages. However, Duke Energy Kentucky, Inc. will not reduce voltage more than 5% below normal allowable ranges.

### **Public and Targeted Appeals for Voluntary Conservation**

Duke Energy Kentucky, Inc. will issue news releases to request customers to voluntarily conserve electricity, with suggestions on how to conserve. Duke Energy Kentucky, Inc. will also contact large commercial and industrial customers (1000 kW or more) requesting them to conserve energy.

Depending on the nature of the emergency, Duke Energy Kentucky, Inc. will issue additional news releases advising customers of a more critical need for voluntary conservation and also notifying customers that Duke Energy Kentucky, Inc. may implement rotating blackouts if the emergency conditions are not alleviated. Duke Energy Kentucky, Inc. will contact large commercial and industrial customers (1000 kW or more) requesting them to curtail all non-essential load.

### **Automatic Reserve Sharing**

Automatic Reserve Sharing is a standard method for utilities to aid an adjoining, interconnected utility whose power reserves are low by transmitting power through the interconnection points to raise the reserves of the affected utility. In time of emergency, Duke Energy Kentucky, Inc. may utilize Automatic Reserve Sharing.

## **III. Remedial Measures in the Event of Emergency (Contd.)**

### **Manual, Involuntary Load Curtailment**

Duke Energy Kentucky, Inc. may implement manual load curtailment, which is a controlled process of rotating customer outages during extreme emergencies. NERC policies may require manual curtailment when Duke Energy Kentucky, Inc. experiences an emergency. NERC policies may also require manual curtailment when the reliability of the Eastern Interconnect is threatened by supply or transmission problems unrelated to conditions within Duke Energy Kentucky, Inc.'s transmission system.

### **Automatic Load Curtailment**

Duke Energy Kentucky, Inc. may implement automatic load curtailment, which is a process where under-frequency relays are used to shed load as soon as the relays detect problems based upon the system frequency. NERC policies may require automatic curtailment when Duke Energy Kentucky, Inc. experiences an emergency or when the Eastern Interconnect is threatened by transmission system reliability problems unrelated to conditions affecting Duke Energy Kentucky's transmission system.

## **IV. Curtailment Procedures**

Involuntary load curtailment is generally accomplished via remote control of circuits that feed large individual customers and/or general distribution loads. Most general distribution circuits supply many customers including one or more essential customers. Duke Energy Kentucky, Inc. will analyze circuits for curtailment eligibility based upon the ability to perform curtailment via remote control and upon the type of load the circuits serve. Duke Energy Kentucky, Inc. will attempt to limit the number of essential customers affected by involuntary load curtailments; however, given the number of circuits within Duke Energy Kentucky, Inc.'s system and the number of customers served by Duke Energy Kentucky, Inc., it is likely that Duke Energy Kentucky, Inc. will interrupt power to some essential customers if involuntary load curtailment procedures become necessary to alleviate emergency conditions. Duke Energy Kentucky, Inc. will adjust manual involuntary curtailment schedules and attempt to provide advance notification to essential customers if involuntary load curtailment occurs.

Duke Energy Kentucky, Inc. will advise the Commission of the nature, time and duration of all implemented emergency conditions and procedures which affect normal service to customers.

Duke Energy Kentucky, Inc. may initiate the following actions, as it deems appropriate, in the event of an emergency where curtailment is imminent or necessary.

- (A) If Duke Energy Kentucky, Inc. is unable to balance its generation and interchange schedules to its load after using all available resources, Duke Energy Kentucky, Inc. may, at its discretion, declare an emergency Commonwealth to the NERC/ECAR Security Coordinator.

- (B) Duke Energy Kentucky, Inc. may enter into power purchases to the extent that generation resources are reasonably available and transmission loading will allow.
- (C) Duke Energy Kentucky, Inc. may use any or all of the remedial measures in section III, above.
- (D) If the transmission system frequency is above 59.8 Hz and Duke Energy Kentucky, Inc. cannot reasonably balance resources to load, then Duke Energy Kentucky, Inc. may curtail firm load to balance resources to load.
- (E) If the transmission system frequency is at or below 59.8 Hz, then Duke Energy Kentucky, Inc. may curtail firm load to balance resources to load.
- (F) If the transmission system frequency is at or below 59.7 Hz, then Duke Energy Kentucky, Inc. may curtail firm load to assist in maintaining regional system integrity.

Automatic under-frequency load shedding may occur in the event of a sudden decline of the frequency on the ECAR System or a sudden breakup that isolates all or parts of the Kentucky transmission system from other interconnected transmission systems. The under-frequency load shed may occur according to the following schedule, with each step shedding approximately an additional five percent of load as compared to the system load:

<u>Step</u>	<u>Freq-Hz</u>	<u>Approximate % Load Shed</u>
1	59.5	5.0
2	59.3	5.0
3	59.1	5.0
4	58.9	5.0
5	58.7	5.0

Under these circumstances, Duke Energy Kentucky, Inc. will interrupt power of selected distribution circuits and lines serving customers throughout its assigned service area at Duke Energy Kentucky, Inc.'s sole discretion.

If automatic load shedding has occurred and frequency is still declining, Duke Energy Kentucky, Inc. may take any additional actions that it deems reasonably necessary to arrest the decline. This may include additional load shedding and coordinated network separations.

If necessary to resynchronize the isolated area or to curtail the decline in frequency, Duke Energy Kentucky, Inc. may take the following steps in the sequence set forth below:

- (A) Duke Energy Kentucky, Inc. may, at its discretion, interrupt power to controlled service loads and to loads rendered service under interruptible tariffs.
- (B) Duke Energy Kentucky, Inc. may reduce voltage up to five percent when deemed appropriate.
- (C) Duke Energy Kentucky, Inc. may manually shed load.

Duke Energy Kentucky, Inc. shall not be liable for power interruptions attributable to:

- (A) the availability of or malfunctions in generation or transmission facilities;
- (B) malfunctions in the local distribution system due to conditions beyond Duke Energy Kentucky, Inc.'s control, such as storms, floods, vandalism, strikes, fires, or accidents caused by third parties;
- (C) Duke Energy Kentucky, Inc. following any applicable orders, policies, guidelines, directives or procedures issued by the Commission, governmental authorities, East Central Area Reliability Council (ECAR), National Electric Reliability Council (NERC), the Midwest ISO, or their successor organizations; provided that Duke Energy Kentucky, Inc. makes reasonable efforts to restore service as soon as reasonably practicable.

**V. Transmission Emergency Rules**

Notwithstanding the above procedures, when Duke Energy Kentucky, Inc. experiences on its transmission facilities an emergency or other event that necessitates the curtailment or interruption of service, Duke Energy Kentucky, Inc. will not curtail or interrupt retail electric service within Duke Energy Kentucky, Inc.'s certified territory, except for service to those customers who have agreed to receive interruptible service, until after Duke Energy Kentucky, Inc. has interrupted service to all other Duke Energy Kentucky, Inc. customers whose interruption may relieve the emergency or other event.

Notwithstanding the foregoing, Duke Energy Kentucky, Inc. may be liable for damages resulting from power interruptions attributable to its gross negligence or willful misconduct.

The provisions of these Emergency Electrical Procedures are subject to the provisions of Duke Energy Kentucky, Inc.'s Retail Electric Tariff, as then in effect and approved by the Commission, including but not limited to the provisions of Duke Energy Kentucky, Inc.'s General Terms And Conditions For Electric Service.