

## **Detailed Working Rules for the Control of Power Supply Reliability in Beijing Power Grid (Trial)**

In order to ensure the city's power supply quality and improve the service level, based on the *Measures for the Supervision and Administration of Electric Power Supply* and the *Regulation of Beijing Municipality on Optimizing Doing Business Environment* and other relevant laws and regulations, we further elaborate on supervision measures for power supply reliability in the city's Power Grid. We hereby revised this Working Rules:

### **I. Contents of Power Supply Reliability Management**

1. The statistical method of power supply reliability indices referred to this Working Rules shall be implemented in accordance with the *Power Supply Reliability Evaluation Regulation of Power System Part 1: General Requirements (DL/T836.1-2016)* (hereinafter referred to DL/T836.1-2016) issued by the National Energy Administration, and shall conform to the IEEE Guide for Electric Power Distribution Reliability Indices (IEEE 1366-2012) (hereinafter referred to IEEE 1366-2012) issued by the American Institute of Electrical and Electronic Engineers.

2. The calculation method of ASAI referred to this Working Rules shall be implemented according to DL/T836.1-2016, specifically:

$$ASAI = \left( 1 - \frac{\text{customer hours off}}{\text{customer hours demanded}} \right) * 100\%$$

in which the calculation method of SAIDI is as following:

$$SAIDI = \frac{\sum \text{time of each blackout} \times \text{number of household per blackout}}{\text{total households}}$$

The customer hours demanded is calculated according to the total number of hours in the year.

3. The power supply reliability indices referred to this Working Rules are reviewed, confirmed and released by the national energy regulatory authority.

4. When calculating ASAI, the following cases of power interruption shall be exempted from calculation:

- 1) The interruption lasts less than 3 minutes;
- 2) Power supply interruption events raised by users or caused by internal reasons of users;
- 3) The power supply interruption event has been determined by the government regulatory authority as meeting the “Major Event Days” requirement defined in the IEEE 1366-2012 standard;
- 4) The power supply interruption is to support the implementation of municipal engineering.

## **II. Measures for Supervising and Administrating Power Supply Reliability**

1. Strictly implement power supply reliability guarantee and service policies formulated by the government, issue corresponding service commitments to high-quality power supply and strictly implement them, and timely disclose service standards online and offline, so as to improve power supply reliability management and service transparency.

2. Strengthen the hierarchical review of power outage plans and integrated balance and optimize arrangement of power outage plans, so as to continuously reduce the impact of power outages on users and avoid repeated power outages.

3. Improve planned power outage control and expand the scope of live-line operations, so as to continuously reduce average annual blackout time and average number of blackouts for users.

4. Strengthen the operation and maintenance management of power grid equipment, promptly eliminate hidden dangers of equipment

defects, and reduce failures caused by external construction, tree lines, floating objects, etc., so as to improve reliable power supply capability of power grid equipment.

5. Strengthen the construction of strong and smart power grid, and give full play to power distribution automation system in fast positioning, fault isolation and restoration of power supply in non-fault areas, so as to minimize the scope of power failure and improve the reliability of urban power supply.

6. Continue to improve the emergency response system, strengthen coordination with relevant government authorities and departments, and prepare emergency repair personnel and spare parts in advance, so as to effectively improve the emergency response capability and avoid long-term power failure.

### **III. Reward and Punishment for Supervising and Administrating Power Supply Reliability**

1. The State Grid Beijing Electric Power Company shall actively implement measures for controlling power supply reliability. If the annual ASAI of the city's power grid were higher than 99% (including 99%), and higher over 0.002 percentage points compared with last year, RMB 1 million access income will be granted.

2. If the annual ASAI of the city's power grid were higher than 99% (including 99%), and the rate of change is between -0.002 to +0.002 (including -0.002 and +0.002) percentage points compared with last year, no reward or punishment will be issued.

3. If the annual ASAI of the city's power grid were lower between 0.002 to 0.004(including 0.004) percentage points compared with last year, a penalty of RMB 50,000 will be issued.

4. If the annual ASAI of the city’s power grid were lower between 0.004 to 0.006(including 0.006) percentage points compared with last year, a penalty of RMB 200,000 will be issued.

5. If the annual ASAI of the city’s power grid were lower than 99%, or lower over 0.006 percentage points compared with last year, a penalty of RMB 500,000 will be issued.

**Table 1 Reward and Punishment Standards  
for Beijing Power Supply Reliability**

<b>Regulatory Content</b>	<b>Regulatory Index</b>	<b>Supervision and Management Objectives</b>	<b>Reward and Punishment Standard</b>
Power Supply Reliability	Average Service Availability Index (ASAI)	ASAI higher than 99% (including 99%), and higher over 0.002 percentage points compared with last year	RMB 1 million access income will be granted
		ASAI higher than 99% (including 99%), and the rate of change is between - 0.002 to +0.002 (including - 0.002 and +0.002) percentage points compared with last year	No reward or punishment
		ASAI lower between 0.002 to 0.004(including 0.004) percentage points compared with last year	A penalty of RMB 50,000
		ASAI lower between 0.004 to 0.006(including 0.006) percentage points compared with last year	A penalty of RMB 200,000
		ASAI lower than 99%, or lower over 0.006 percentage points compared with last year	A penalty of RMB 500,000

#### **IV. Reward and Punishment Procedure**

- 1) Indices releasing: Each year, the national energy regulatory authority would review, confirm and release the annual indices of Beijing's grid power-supply reliability of the previous year.
- 2) Indices assessing: The city's urban management authority, based on the indices of Beijing's grid power-supply reliability of the previous year released by the national energy regulatory authority, would (or would not) make an assessment on the State Grid Beijing Electric Power Company according to the evaluation criteria, and issue a notification of assessment.
- 3) Assessment feedback: As soon as receiving the urban management authority's notification of assessment on its power-supply reliability indices, the State Grid Beijing Electric Power Company shall start to verify, rectify and make feedbacks, and pay the penalty as required by the notification (if have).
- 4) Rectification and improvement: The State Grid Beijing Electric Power Company shall take earnest actions to implement the advice on improving its power supply reliability given by the urban management authority and the national energy regulatory authority, strengthening the operation and maintenance management of power grid and eliminating hidden dangers of equipment defects, so as to improve the power supply reliability of Beijing's power grid.

**Table 2 Flowchart of the Reward and Punishment Procedure of Beijing Power Supply Reliability Supervision and Management**

