STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on February 12, 1997

COMMISSIONERS PRESENT:

John F. O'Mara, Chairman
Eugene W. Zeltmann
Thomas J. Dunleavy

CASE 96-E-0979 - Proceeding on Motion of the Commission as to Proposed Changes to the Standards on Reliability and Quality of Electric Service, filed in Case 90-E-1119.

ORDER ADOPTING CHANGES TO STANDARDS ON RELIABILITY AND QUALITY OF SERVICE

(Issued and Effective February 26, 1997)

BY THE COMMISSION:

The attached staff memorandum recommends that the Commission adopt revisions to the Standards on Reliability and Quality of Electric Service originally adopted by the Commission in Case 90-E-1119, and as revised in Case 95-E-0165.

The standards originally adopted by the Commission require the utilities to file an annual report on reliability and power quality by June 30 of each year. Staff proposes revising the reporting requirements associated with the service standards in a manner that will improve the timeliness of the annual filings made by the utilities, and reduce the filing burden placed on the utilities, without reducing the effectiveness of the standards.

The Commission orders:

1. The modifications to the Standards on Reliability and Quality of Electric Service set forth herein are adopted.

2. This proceeding is continued.

By the Commission,

(SIGNED)

JOHN C. CRARY
Secretary

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

January 28, 1997

TO: THE COMMISSION

FROM: ELECTRIC DIVISION, OPERATIONS SECTION

SUBJECT: CASE 96-E-0979 - Proceeding on Motion of the Commission as to Proposed Changes to the Standards on Reliability and Quality of Electric Service Filed in C. 90-E-1119

RECOMMENDATION: Staff recommends that the proposed revisions to the standards on reliability and quality of electric service be adopted.

INTRODUCTION

Staff recommends that the Commission modify the Standards on Reliability and Quality of Electric Service. The Commission instituted a proceeding on November 4, 1996, for the purpose of soliciting comments from interested parties. Comments were due to the Commission by December 31, 1996. The modifications are the result of a staff review of the standards, as part of the recent effort towards reducing and streamlining regulatory requirements. Staff has found that certain parts of the filing requirements are no longer necessary, and in fact, have become burdensome for the electric utilities. Eliminating these requirements will not diminish the effectiveness of the standards, and allows the filings to be made in a more timely manner. The recommended modifications are discussed in more detail below.

BACKGROUND

The electric service standards were developed in response to a 1989 Department policy initiative to establish service standards for electric, telephone, gas, and water service. By order issued December 18, 1990, the Commission initiated a proceeding to consider electric reliability and quality standards. It issued staff’s proposal for review and comment to consumer groups, electric utilities, and other

interested parties. Comments were submitted by the major electric utilities and several other interested parties.

The respondents generally agreed that the proposed standards were a suitable means for ensuring that reasonable reliability and quality of electric service would be delivered in each electric operating area within New York State. Specifically, there was agreement that the standards should: (1) recognize the various differences among utility franchise and operating areas, (2) establish both a threshold Minimum Level and a desirable Objective Level of electric service, (3) use accepted industry indices to measure reliability performance, (4) make provisions for identifying and improving the performance of worst-performing circuits and operating areas that do not meet minimum performance levels, and (5) require annual reports to the Commission.

The standards adopted by the Commission in 1991 use the System Average Interruption Frequency Index (SAIFI)[1] and the Customer Average Interruption Duration Index (CAIDI)[2] as the indices for (1) measuring frequency and duration of service interruptions in each operating area of each major New York State electric utility, and (2) identifying the worst-performing circuits in each operating area. The standards excluded interruptions caused by major storms from the calculations.[3]

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[1] The number of times the average customer's service is interrupted in a year.

[2] The average number of hours required to restore service to a customer whose service is interrupted.

[3] Interruptions caused by major storms are largely outside a utility's control and are not indicative of the reasonableness or effectiveness of the maintenance of the distribution system. A major storm is defined as a period of adverse weather during which service interruptions affect at least 10 percent of the customers in an operating area and/or result in customers being without electric service for a duration of at least 24 hours.

For operating areas, unacceptable performance was defined to occur when either the SAIFI or the CAIDI index of an operating area fell below the Minimum Level values established in the standards.

To determine worst-performing circuits, the SAIFI and CAIDI indices were to be calculated for each circuit in each operating area at the end of the calendar year. Then each circuit was to be placed in rank order, according to its respective SAIFI and CAIDI index, with the highest number at the top of the list. Thereafter, a total of five percent of the circuits in each operating area with the highest indices (or three circuits at a minimum) were to be selected as worst-performing circuits.

The standard, which was adopted by the Commission, stated that each company shall take measures necessary for each of its operating areas to meet a threshold Minimum Level of adequate service and to strive to attain a better Objective Level of electric service. Each of the levels were defined by using SAIFI and CAIDI indices in the criteria.

In 1994, staff commenced a review of the numerical targets for frequency and duration of interruption to determine whether the initial targets adopted in Case 90-E-1119 were still valid. The Commission, in Case 95-E-0165, adopted new targets for several operating areas and concluded that the majority of the targets were still valid.

STREAMLINING REGULATIONS

In 1996, staff conducted a review of the filing requirements of the electric service standards. In separate meetings with the utilities during the last quarter of 1995 and the first quarter of 1996, staff advised company representatives of its intent to review the effectiveness of the electric service standards, including whether changes were needed to the filing requirements. In May 1996, staff hosted a joint meeting with representatives of each of the major electric utilities to

discuss this matter. Based on those discussions and staff's subsequent review of the 1996 service standard filings submitted at the end of June 1996, staff proposed several changes which it believes will enhance the company filings, without reducing their effectiveness. Staff's proposal has been discussed with the COB reporting requirements team and found to be consistent with its goals.

STAFF PROPOSAL

Staff proposes two significant changes to the filing requirements of the electric service standards. First, staff recommends eliminating the requirement that utilities analyze five percent of their worst circuits as prescribed by the Commission as part of the filing. The companies argued and staff agreed that this requirement had become something of a post-review exercise in that the utilities were merely compiling and documenting corrective actions that had already been taken. This requirement has become a time consuming exercise of little benefit to the companies. In addition, staff noted that the companies have now all developed their own circuit review programs, which was not the case prior to the adoption of the Case 90-E-1119 standards. While staff has recommended the elimination of the worst-circuit filing requirement it believes that the concept of a circuit review is still valid. It recommends replacing the existing requirement with a requirement that the utilities file details of their own programs to analyze five percent of their worst circuits each year, along with representative samples of the program documentation. This will allow staff to monitor the effectiveness of each utility's program while increasing the efficiency of utility reporting.

Secondly, staff recommended changing the filing deadline from June 30 each year to March 31. This will allow the filings to be more timely. The utilities had stated that this is reasonable, assuming the worst-circuit analysis requirements are eliminated.

Utility Comments

NYSEG and Con Edison submitted comments regarding staff's proposal to revise the electric service standards.

NYSEG concurred with staff's proposal to eliminate the requirement to analyze five percent of the worst-performing circuits and to move the Annual Utility filing date from June 30 each year to March 31. In addition, NYSEG suggested clarifying proposed language describing the information that would be filed to describe the company's efforts to address worst-performing circuits. Staff agreed with NYSEG's suggestion and through discussions with the company, developed revised language.

Con Edison concurred with staff's proposal to eliminate the requirement to analyze five percent of the worst-performing circuits. The company failed to agree with staff's proposal to move the filing date to March 31, stating that the "June 30 date is a function of the time required for the development of Con Edison's own analysis." The company also claims June 30 is premature given that the physical work necessary for some corrective actions would not be carried out by the earlier date. Staff rejects the company's assertion in that it is not necessary to complete all physical activities before the annual filing is submitted. The very nature of the filing reporting requirements support a review of the company's corrective actions on an on going basis. Actions that are completed following a March 31 filing date may be either reviewed by staff following the annual filing or included in the next year's filing. The company further states that while,

> filing a circuit analysis in the Commission prescribed format created an additional administrative burden, the methodology was not a primary reason for the June 30 filing date, and of itself, did not warrant three additional months beyond March 31 for filing the analysis.

Con Edison offered no support for this statement and staff strongly objects to it. In joint discussions with the seven utilities, there was clear agreement that the worst-circuit

filing requirement was the primary reason for the June 30 filing agreement. Staff also notes that no other utility objected to the March 31 filing date.

Finally, Con Edison proposes replacing the term "worst-performing circuit" with "lowest performance-ranked circuits". The company states that the term "worst-performing" connotes a poor or less than adequate performance level that may not be the case when the circuit's actual performance is measured. Con Edison offers no new arguments to those presented in the adoption of the original standards in Case 90-E-1119. In that case, staff noted and the Commission agreed, "the phrase 'worst-performing' conveys our intent of highlighting troublesome circuits in clear language." Staff believes this intent remains today and rejects the company's proposal.

RECOMMENDATION

Staff recommends that the proposed revisions as discussed herein to the standards on reliability and quality of electric service be adopted. This memorandum has been reviewed by Steven Blow of Counsel's Office.

Respectfully submitted,

MICHAEL WORDEN
Operations Section

Reviewed by:

HOWARD TARLER
Chief, Operations Section

APPROVED BY:

RONALD J. LIBERTY
Director, Electric Division

Attachments

SERVICE RELIABILITY AND QUALITY STANDARDS APPLICABLE TO CLASS A ELECTRIC CORPORATIONS[1]

(Statutory Authority: Public Service Law, Sections 65[1] and 66[1])

SECTION 1. GENERAL PROVISIONS

(a) The standards set forth herein have been developed to provide consumers, the Public Service Commission (PSC) and the electric utilities with a uniform method of ensuring that the reliability and quality of electric service that is being delivered in an electric utility's operating area is reasonable.

(b) The standards described in subsequent sections adopt the definitions, requirements for data maintenance, retention of records, report filing and interruption information set forth in 16 NYCRR, Chapter II, Electric Utilities; Subchapter A, Service; Part 97, NOTICE OF INTERRUPTION OF SERVICE, hereafter referred to as Part 97.

(c) These standards establish the reliability of service on an annual basis under all operating conditions except: (1) Major Storms, as defined in Part 97, Section 97.1, Definitions, and (2) major catastrophic events, such as plane crashes, that are beyond a utility's control. Justification for exclusion due to catastrophic events must be submitted with each company's interruption data.

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[1] The Pennsylvania Electric Company qualifies as a Class A electric utility, but it is exempted from these standards.

(d) The utility shall, as a general practice, provide adequate resources to meet the service levels set forth herein. Reaching the Objective Levels of service that are established herein is not indicative of whether the utility has provided adequate service to a particular customer or group of customers.

SECTION 2. DEFINITIONS

For the purpose of this Section, the following definitions shall supplement those set forth in Part 97, Section 97.1, Definitions.

(a) Reliability

The degree to which electric service is supplied without interruption.

(b) Power Quality

In general, the characteristics of electric power received by the customer, with the exception of interruptions. Characteristics of electric power that detract from its quality include momentary interruptions, waveform irregularities and voltage variations - either prolonged or transient. Power quality problems shall include, but not be limited to, disturbances such as momentaries; high or low voltage; voltage spikes and transients; flickers and voltage sags, surges and short-time overvoltages; and harmonics and noise.

(c) Momentary Interruption

Interruption of electric service with a duration less than five minutes, as defined in Part 97, Section 97.1, Definitions.

(d) Operating Area

A geographical sub-division of each electric utility's franchise territory that functions under the direction of a company office as used for interruption reporting under Part 97. These areas may also be referred to as regions, divisions, or districts.

(e) Service Reliability Measures

The following performance indices for measuring frequency and duration have been developed by the Edison Electric Institute (EEI), the Institute of Electrical and Electronics Engineers (IEEE), the Canadian Electric Association (CEA), and the American Public Power Association (APPA). They are recognized as standard definitions for the electric utility industry and may be applied to entire distribution systems, operating areas, sub-operating areas, or individual circuits. Interruptions attributed to PSC cause code (01), Major Storms, as defined in Part 97, shall be omitted from the calculation of these indices throughout this standard.

(1) System Average Interruption Frequency Index (SAIFI)

This index is the average number of times that a customer is interrupted during a year. It is determined by dividing the total annual number of customers interrupted by the average number of customers served during the year. A customer interrupted is considered to be one interruption to one customer. This is the same as one customer affected.

$$\text{SAIFI} = \frac{\text{total number of customer interruptions}}{\text{total number of customers served}}$$

or

$$\text{CA/CS} = \frac{\text{total number of customers affected}}{\text{total number of customers served}}$$

(2) Customer Average Interruption Duration Index (CAIDI)

This is the average interruption duration time for those customers that experience an interruption during the year. It approximates the average length of time required to complete service restoration. It is determined by dividing the annual sum of all customer interruption durations by the sum of customers experiencing an interruption over a one-year period.

$$\text{CAIDI} = \frac{\text{sum of customer interruption durations}}{\text{total number of customers interrupted}}$$

or

$$\text{CH/CA} = \frac{\text{sum of customers affected hours}}{\text{total number of customers affected}}$$

SECTION 3. SERVICE RELIABILITY OBJECTIVES

(a) Each utility shall maintain procedures to meet the service levels established herein. The utilities shall file with the Department by March 31 each year details of its electric service reliability program. The program should be designed to improve reliability where it can be improved cost-effectively and to sustain that reliability over time. Special emphasis should be given to the worst-performing circuits in each operating area. As described in Section 4 below regarding power quality disturbances, interruptions shall not be reduced by unduly increasing the number of momentary interruptions. Service interruptions shall be reported to Department staff in accordance with the requirements of Part 97.

(b) In the event that service must be interrupted for purposes of working on the lines or equipment, the utility's work scheduling procedures shall provide that an attempt be made to do the work at a time which will cause minimal inconvenience to customers and, where reasonable and

practicable, to provide notice to customers in advance of the interruption. The utilities shall keep a record, available for staff inspection, of those instances in which the utility concludes that it is not reasonable or practicable to provide advance notice.

SECTION 4. POWER QUALITY OBJECTIVES

(a) Each utility shall consider power quality in the design of its distribution power-delivery system components. It shall strive to avoid and to mitigate, to the extent feasible and cost-effective, power quality disturbances under its control that adversely affect customers' properly designed equipment.

(b) Each utility shall, as a minimum, maintain a power quality program that includes its performance objectives and procedures. The utilities shall file with the Department by March 31 each year details of its power quality program. The program should be designed to respond promptly to customer reports of power quality problems. The program should strive to avoid, mitigate, or resolve power quality problems to the extent cost-effective and practical.

SECTION 5. OPERATING AREA RELIABILITY PERFORMANCE LEVELS

Each utility shall take the measures necessary to meet the service levels defined in (a) and (b) below. The SAIFI and CAIDI indices of each operating area shall be calculated at the end of each calendar year for the previous 12-month period. The number of customers served that is used in computing these indices shall be the same as reported under Part 97.

(a) Objective Level

This level shall represent the fully adequate level of electric service that each utility should strive to achieve and maintain. It shall be reached when both of the SAIFI and CAIDI

indices of each operating area of each electric utility are equal to or better than the SAIFI and CAIDI values established as the Objective Level under Section 8.

(b) Minimum Level

This level shall represent the lower threshold of adequate service below which further review, analysis, and corrective action may be required. It shall be reached when the SAIFI and CAIDI indices of each operating area of each electric utility are equal to or better than the Minimum SAIFI and CAIDI values set forth under Section 8.

(c) Failure to Meet Minimum Level

(1) Performance below the Minimum Level shall be considered unacceptable when either the SAIFI or the CAIDI index of an operating area falls below the Minimum Level SAIFI and CAIDI values established under Section 8 for the calendar year.

(2) When a utility's calculations under (c)(1) above show that an operating area has fallen below the Minimum Level for the calendar year, the utility shall prepare a report to be submitted to the Department which analyzes the interruption patterns and trends, as well as the operating and maintenance history of the affected operating area, describes the problems causing unacceptable performance, and the actions the utility is taking to resolve them. The report shall contain target dates for completion of the corrective action. The utility may determine that actions on its part are unwarranted - in those cases, its report shall provide adequate justification for such a conclusion. This analysis shall be included in the annual report described in Section 7.

SECTION 6. INDIVIDUAL CIRCUIT RELIABILITY PERFORMANCE LEVEL

(a) Each company shall develop and maintain a program for analyzing its worst-performing circuits during the course of each year. The companies shall analyze a minimum of five percent of its circuits as part of its circuit review program each year.

SECTION 7. ANNUAL REPORT

Each utility shall file a report with the Department by March 31 of every year that includes the following information:

(a) An overall assessment of the reliability performance corporate-wide, and, in each of the company's operating areas, in relation to the Objective and Minimum Levels for interruption frequency and duration, as set by the Commission. This section of the report shall also include the requirements of Section 5.(c)(2), for those regions failing to meet the Minimum Level.

(b) A description of the program the company has in place for analyzing worst-performing circuits and a summary of the results of the program. Copies of monthly, quarterly, or annual circuit analysis reports used by the company can be used to fulfill this requirement.

(c) A description of the company's current reliability programs as discussed in Section 3a, noting changes that were made from the previous year.

(d) A status report on the company's power quality programs as discussed in Section 3b, including data on the number of power quality complaints received during the year and the number of power quality investigations conducted during the year.

(e) A listing of circuit performance, by operating area, based on SAIFI and CAIDI performance for the calendar year.

SECTION 8. SERVICE LEVEL VALUE ESTABLISHMENT

From time to time, the Department shall recommend to the Commission the actual numerical values for the SAIFI and CAIDI Objective and Minimum levels to be assigned to each operating area of each electric utility. Among the factors selected to guide the establishment of the SAIFI and CAIDI values will be comparison of actual multi-year SAIFI and CAIDI indices, trends among the indices, the average, high and low values of multi-year indices, demographic, physiographic and load characteristics of an operating area and the relative performance of an operating area in relation to other operating areas within a given utility’s franchise area. The current Objective and Minimum Level values for SAIFI and CAIDI indices of operating areas are provided in Attachment 1.

Attachment (1)

ELECTRIC SERVICE STANDARDS

OBJECTIVE AND MINIMUM LEVEL VALUES FOR OPERATING AREAS

		Interruption Duration Hours (CAIDI)		Interruption Frequency (SAIFI)	
Company Operating Area		Objective	Minimum	Objective	Minimum
CHG&E	Catskill	1.50	2.00	0.77	1.08
	Kingston	1.50	1.84	1.30	1.49
	Poughkeepsie	1.75	2.45	0.89	1.17
	Beacon/Peekskill	1.42	1.89	1.25	1.60
	Newburgh	1.50	2.00	0.83(1)	1.60
CON ED	Bronx	1.10	1.30	0.38	0.62
	Staten Island	1.05	1.77	0.31	0.48
	Brooklyn	1.18	1.52	0.35	0.55
	Queens	0.89(1)	1.62	0.29	0.34
	Westchester	1.44	1.54	0.40	0.47
LILCO	Queens/Nassau	0.93	1.12	0.93	1.23
	LILCO Central	1.11	1.35	1.09	1.40
	West Suffolk	1.09	1.21	1.30	1.60
	East Suffolk	0.89	1.19	1.75	2.10
NMPC	NM Central	1.59	1.97	0.87	1.08
	Mohawk Valley	2.00	2.40	0.99	1.33
	Northern	1.90	2.10	0.84	1.22
	Capital	1.75	2.10	0.48	0.60
	Northeast	2.50	3.00	1.15	1.41
	Frontier	1.30	1.52	0.41	0.51
	Genesee	1.70	2.09	0.90	1.17
	Southwest	1.46	1.70	0.62	0.84
NYSEG	Auburn	1.26	1.73	1.17	1.40
	Berkshire	1.50	1.70	1.01	1.29
	Binghamton	1.75	2.00	0.68	1.20
	Brewster	1.75	2.50	1.15	1.41
	Elmira	1.75	2.40	0.63	1.03
	Geneva	1.50	1.85	1.30	1.48

	Hornell	1.60	1.97	0.65	0.91
	Ithaca	1.75	2.40	0.73	0.96
	Lancaster	1.50	1.72	1.03	1.39
	Liberty	2.00	2.50	1.30	1.75
	Lockport	1.31	1.65	0.41	0.70
	Oneonta	1.80	2.50	1.02	1.28
	Plattsburgh	1.21(1)	1.70(1)	1.61(1)	2.25(1)
O&R	O/R Eastern	1.07	1.46	1.24(1)	1.46(1)
	O/R Central	1.35	1.70	1.42(1)	1.70(1)
	O/R Western	1.27	1.53	1.63(1)	2.25
RG&E	Rochester	1.60	1.80	0.72	1.01
	Cand. Finger Lakes	1.11	1.43	1.70	2.20
	Lakeshore	1.13	1.47	1.50	3.00(1)
	Genesee Pavillion	1.21	1.41	1.25	1.60
CON ED NETWORK					
	Manhattan	2.75	3.75	0.007	0.015
	Bronx	2.40	2.75	0.006	0.008
	Brooklyn	2.40	2.75	0.012	0.014
	Queens	1.44(1)	2.75(1)	0.003	0.006
	Westchester	1.70	2.75	0.004	0.020

(1) Revised as of October 12, 1995