

1 **Volume 1, Section 2 – Customer Operations**
2

3 **Q. (Delaware’s *Electricity Service Reliability and Quality Standards* regulation**
4 **established through Order No. 7002. A copy of the regulation can be found at the**
5 **following website:**

6 <http://dep.sc.delaware.gov/orders/7002.pdf>
7

- 8 **a. Please provide a comparison of NP’s distribution reliability policy to**
9 **Delaware’s *Electricity Service Reliability and Quality Standards*; i.e., which**
10 **aspects of customer service in Delaware’s regulation are covered in NP’s**
11 **policy, which aspects are not, which aspects are not relevant and why, etc?**
12 **b. Would the Province benefit from the adoption of a “code” requiring**
13 **distribution companies to design and maintain procedures to achieve target**
14 **reliability performance benchmarks and minimum performance standards?**
15 **What are the pros and cons of such “codes”?**
16 **c. In NP’s opinion, who are the industry leaders in the electricity distribution**
17 **business and what are the key performance areas upon which such**
18 **judgments are made?**
19 **d. In NP’s opinion, what target SAIDI and SAIFI benchmarks are appropriate**
20 **for the island interconnected system and on what basis should such targets be**
21 **established?**
22

23 **A. I. Introductory**
24

25 Newfoundland Power has reviewed Order No. 7002 issued by the Public Service
26 Commission of the State of Delaware (the “Delaware PSC”), and the Electric Service
27 Reliability and Quality Standards attached as Exhibit A to the order (the “Delaware
28 Standard”). In addition, Newfoundland Power has reviewed the Delmarva Power &
29 Light Company (“Delmarva Power”) 2006 Annual Performance Report submitted on
30 April 30, 2007 in compliance with the Delaware Standard.
31

32 Newfoundland Power has completed some other research to provide context for its
33 understanding of the Delaware Standard to enable the Company to respond to this request
34 for information. While this research has enabled the Company to provide this broad
35 brush response, Newfoundland Power recognizes that its understanding of the
36 engineering and operational detail concerning the Delmarva Power system is not
37 comparable to its understanding of the Newfoundland Power system.¹

¹ For example, the Delaware Standard specifically provides that Delmarva Power “...shall have an inspection and maintenance program designed to maintain delivery facilities performance at an acceptable reliability level. The program shall be based on industry codes, national electric industry practices, manufacturer’s recommendations, sound engineering judgement and past experience.” (See Section 7.1). As Newfoundland Power is not informed as to Delmarva Power’s inspection and maintenance programs, the context for Newfoundland Power’s understanding of the Delaware Standard is necessarily incomplete.

II. The Delmarva Power Experience

Origins of The Delaware Standard

The genesis of the Delaware Standard appears to have been an investigation by the Delaware PSC into certain outages experienced by Delmarva Power in 1999.² A key focus of the investigation was whether Delmarva Power was investing sufficiently in the reliability of its transmission and distribution systems. The Delaware PSC's investigation was undertaken in the context of industry restructuring at the time:

“In general, the reliability of the distribution system is subject to increasing risks and uncertainties as the electricity industry becomes more competitive. Consequently, the Commission should play a role in overseeing DP&L's distribution reliability efforts, and in providing DP&L with the proper financial incentives to maintain a safe, reliable system.”³

The Delaware Standard was the subject of a settlement agreement in 2006. The Standard replaced interim reliability rules, adopted in a 2003 settlement agreement, designed to allow utilities to maintain historic levels of reliability after restructuring. Prior to 2003, Delaware had no specific reliability regulations for utilities.

Originally the Delaware Standard applied to two utilities, Delmarva Power and the Delaware Electric Cooperative. Recently, the Delaware Electric Cooperative was removed from the regulatory supervision of the Delaware PSC.

The Delaware Standard

This Delaware Standard requires the maintenance and retention of reliability data and the reporting of reliability objectives, planned actions and projects, programs, load studies and actual resulting performance on an annual basis, including major events.

In the Delaware Standard the utility is required to identify the 2% of distribution feeders or 10 feeders, whichever is more, serving at least one Delaware customer, that have the poorest reliability. The utility is required to ensure that feeders, identified as having the poorest reliability, *shall not appear in any two consecutive* Performance Reports without initiated corrective action.

According to its 2006 Annual Performance Report, Delmarva Power spent approximately \$98 million in operating and capital expenditures on its transmission and distribution assets in 2006. Delmarva Power has approximately 292,000 customers on 295 distribution feeders.

² See *Investigation into the July 1999 Outages and General Service Reliability of Delmarva Power & Light Company* February 1, 2000, by Exponent Failure Analysis Association and Synapse Energy Economics, prepared for Delaware PSC staff, Delaware PSC Docket No. 99-328.

³ *Ibid*, p. 38.

1 The Delaware Standard is in effect through 2012 and may be reviewed, revised or
2 extended as necessary.

3 **III. The Newfoundland Power Experience**

4 ***Background***

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8 In his 1998 Report to the Board on Newfoundland Light & Power Co. Limited Quality of
9 Service and Reliability of Supply, (the “Quality Service Report”), Mr. D.G. Brown, P.Eng.
10 concluded that:

11
12 “After a thorough review of the material provided by the Board and the
13 Company, detailed discussion with senior people at the Company’s offices
14 and visits to some of the Company’s facilities in the St. John’s region, the
15 Engineer concludes that the Company is doing an effective job in
16 maintaining and operating its facilities in the provision of electric service to
17 its customers. It is noted that the Company’s emphasis, now that there is
18 practically no load growth on the system, is directed more toward customer
19 service than construction of new facilities. The reliability of supply to
20 Company customers is considered to be acceptable, although lower than the
21 average for Canadian utilities. It is important that the utility maintain and in
22 fact seek to improve its performance in this regard.”

23
24 The Quality of Service Report identified the two major causes of the Company’s
25 reliability performance at that time as defective equipment and adverse weather.

26
27 The Quality of Service Report clearly indicated to the Board and Newfoundland Power
28 that the Company should seek to improve its reliability performance. In response to this,
29 Newfoundland Power has undertaken a number of initiatives to improve its reliability
30 performance and associated reporting.

31
32 A description of many of the more prominent of these initiatives is contained at
33 2.3.2 *Reliability* in the Company Evidence.

34 ***Current Newfoundland Power Practice***

35
36
37 Regulatory legislation in Newfoundland and Labrador requires Newfoundland Power to
38 file annual capital budgets with the Board of Commissioners of Public Utilities (the
39 “Board”).⁴ Current regulatory practice requires Newfoundland Power to identify and
40 justify proposed expenditures which are aimed at maintaining or improving distribution
41 reliability⁵ as well as report on actual capital expenditures.⁶

⁴ See section 41 of the *Public Utilities Act*.

⁵ See the *Provisional Capital Budget Application Guidelines*, June 2005.

⁶ Board approvals of capital budgets require the utility to file annual reports on capital budgets within 60 days of year-end.

1 Current regulatory practice also requires Newfoundland Power to report reliability
2 performance, including SAIDI and SAIFI, to the Board on a quarterly basis.⁷ Significant
3 power outages are required to be reported to the Board within 1 business day.⁸
4

5 **IV. Comparative Distribution Reliability Performance**

6
7 Table 1 compares the 3 year reliability performance for Delmarva Power and
8 Newfoundland Power.⁹
9
10

Table 1

**Comparison of Distribution Reliability Performance
3 Year Averages**

Year	Delmarva Power ¹⁰		Newfoundland Power	
	SAIDI	SAIFI	SAIDI	SAIFI
2004	3.98	1.55	3.04	2.08
2005	2.73	1.44	2.93	1.92
2006	3.58	1.43	2.62	1.80

11
12
13 Based upon the limited information provided it appears that reliability performance for
14 the two utilities is similar, Delmarva Power has slightly fewer feeders (295 vs. 303) but
15 approximately 25% more customers (292,000 vs. 230,000 in 2006). Operating and
16 capital expenditures on transmission and distribution for Newfoundland Power are
17 materially less than those reported by Delmarva Power¹¹.
18

19 **V. Specific Responses**

20
21 (a) Newfoundland Power does not have a formal distribution reliability policy.
22

⁷ The practice of quarterly reporting has existed since 1997 and is co-ordinated with Newfoundland Power's quarterly reporting to capital markets.

⁸ This requirement originated in 2000 at the request of Board staff.

⁹ No engineering analysis has been made to evaluate similarities and differences in environment, operating territory, mix of rural and urban customers and engineered distribution system attributes that might explain differences in performance indices between Delmarva Power and Newfoundland Power.

¹⁰ From *Delmarva Power 2006 Annual Performance Report*, April 30, 2007, filed with the Delaware PSC.

¹¹ In 2003, transmission and distribution operating costs for Delmarva Power were reported to be approximately \$23 million and capital costs were approximately \$27 million. In 2006, operating costs were approximately \$12 million and capital costs were approximately \$86 million. No detailed engineering analysis has been made to evaluate the reasons behind either the differences or similarities of operating and capital cost trends of Delmarva Power and Newfoundland Power.

1 Newfoundland Power does, however, have established practices for reliability
2 reporting and justification of reliability based capital expenditures.

3
4 Attachment A contains a comparison of the Delaware Standard and current
5 Newfoundland Power practice.

- 6
7 (b) In Newfoundland Power's view, for the Province to benefit from the adoption of a
8 *code* similar to the Delaware Standard there should be some tangible
9 improvement in results or process.

10
11 The current practice of Newfoundland Power includes reliability assessment and
12 reporting on a conceptually similar basis to that required by the Delaware
13 Standard.

14
15 In Newfoundland Power's opinion, there would be no tangible improvement in
16 actual reliability reporting or reliability costs resulting from the adoption of a code
17 similar to the Delaware Standard for Newfoundland Power.

18
19 Newfoundland Power observes that the Delaware Standard appears to have been
20 developed over a 7 year period to address a specific issue (underinvestment) in a
21 specific context (industry restructuring) in the state of Delaware. Newfoundland
22 Power does not believe such an exercise is justified in the context of Newfoundland
23 Power's current practice related to ensuring ongoing distribution reliability.

- 24
25 (c) In Newfoundland Power's opinion, the leaders in distribution utilities are those that
26 provide least cost reliable service, on a safe and environmentally responsible basis.

- 27
28 (d) Newfoundland Power is not currently in a position to determine appropriate target
29 SAIDI and SAIFI benchmarks for the island interconnected grid.

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31 The establishment of target SAIDI and SAIFI benchmarks would necessarily
32 require a detailed engineering review of what a reasonable target might be in the
33 Newfoundland environment, taking into consideration local weather conditions
34 and the isolated nature of the island interconnected system.

35
36 The effect of the application of such benchmarks for the island interconnected
37 system is unclear in light of the comparative distribution reliability performance
38 set out in *IV. Comparative Distribution Reliability Performance* above.

39
40 The Delaware Standard determines a specific SAIDI benchmark for Delmarva
41 Power of 4.9 hours of outage (SAIDI) per year. While this approach is seen as

1 justified in Delaware, other types of benchmarks have been used in other
2 jurisdictions.¹²

3
4 Through prudent management and the use of sound engineering judgement
5 Newfoundland Power has been able to improve system reliability in a measured
6 way. In the circumstances, it is doubtful the establishment of a *target* SAIDI
7 benchmark for Newfoundland Power as has been done for Delmarva Power would
8 provide any appreciable benefit to Newfoundland Power's customers.
9

10 **VI. Concluding**

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12 It appears to Newfoundland Power that the development of the Delaware Standard was a
13 specific and considered regulatory response to a perceived risk (i.e., underinvestment) to
14 distribution reliability which resulted from industry restructuring in the State of Delaware.
15

16 In the absence of a perceived risk to distribution reliability in Newfoundland and
17 Labrador, it does not appear to Newfoundland Power that adoption of a standard similar
18 to the Delaware Standard for the Newfoundland island interconnected grid is justified.

¹² Utilities operating under the jurisdiction of the Department of Telecommunication and Energy in the State of Massachusetts use the concept of a *Poor Performing Circuit* as being a feeder that has sustained a circuit SAIDI or SAIFI value of more than 300% of the system average for two consecutive years. This approach is similar to Newfoundland Power's practice of comparing worst performing feeders to the system average.

**Comparison of the Delaware Standard and
Current Newfoundland Power Practice**

Requests for Information

Comparison of the Delaware PSC Electric Service Reliability and Quality Standards and the practices at Newfoundland Power:

Item	Delaware Standard	Newfoundland Power Practice
Filing requirements	<ul style="list-style-type: none"> • Submit on or before March 31 of each year a Planning and Studies report (upcoming year) • Submit on or before April 30 each year a Performance report (previous year) 	<ul style="list-style-type: none"> • Reliability reports included with quarterly regulatory reports • Capital projects included in annual capital budget application
Performance benchmarks	<ul style="list-style-type: none"> • Delaware Electric Cooperative SAIDI 635 minutes or 10.6 hours • Delmarva SAIDI 295 minutes or 4.9 hours • Constrained hours of operation 600 hours • Benchmarks used to identify feeders requiring further review and analysis • Penalties may be assessed if benchmarks are not achieved • Benchmarks based upon pre-restructuring performance • No SAIFI Benchmark 	<ul style="list-style-type: none"> • Benchmarks not used
Inspection and maintenance program	<ul style="list-style-type: none"> • Inspect and maintain substation equipment at least once every 2 years • Inspect all right of way vegetation every 4 years 	<ul style="list-style-type: none"> • Substation inspections are completed monthly • Oil samples on power transformers and breakers done annually • Transmission right of ways are inspected every year • Condition based assessment program
Engineering studies	<ul style="list-style-type: none"> • Load and planning studies as specified by the control authorities • Annual stakeholders meeting on or before March 31 • Reliability planning study completed by March 31 each year 	<ul style="list-style-type: none"> • Planning undertaken cooperatively with Hydro
Reliability reporting	<ul style="list-style-type: none"> • SAIDI, SAIFI and CAIDI • Constrained hours of operation • 8 hours CEMI and 9 times CELID report 	<ul style="list-style-type: none"> • SAIDI and SAIFI

Requests for Information

Item	Delaware Standard	Newfoundland Power Practice
Worst Performing Feeders	<ul style="list-style-type: none"> • 2% of all feeders, or 10 feeders whichever is more • Feeders identified as worst performing shall not appear in any two consecutive annual reports 	<ul style="list-style-type: none"> • Analysis of 15 worst performing feeders based upon SAIDI, SAIFI and CAIDI • Engineering assessments identify feeder candidates for capital expenditure • Average of 3 feeders per year (or approximately 1% of all feeders) in period 1999 through 2007
Notification of major system event	<ul style="list-style-type: none"> • Notification as soon as practical, but not more than 36 hours after the onset of the event • Threshold of 10% of customers experience a sustained outage 	<ul style="list-style-type: none"> • Power Outage/Incident Advisory Policy and Procedures • 5,000 customer hours reporting threshold • NP would report an outage involving 10% of customers if it was longer than 15 minutes in duration • Notification as early as possible or by close of business the next day
Time to respond to outages	<ul style="list-style-type: none"> • Within 2 hours of notification by 2 or more customers • Or as soon as the situation permits 	<ul style="list-style-type: none"> • Target of 85% in 2 hours
Outage Management and Control Systems	<ul style="list-style-type: none"> • Outage management system integrated with a geographic information system • Generate street maps indicating outage locations • SCADA system for remote monitoring and control 	<ul style="list-style-type: none"> • Outage management system integrated with customer service system • Outage notification system providing customized outage information • SCADA system for remote monitoring and control • Customized SCADA application to restore power after under frequency load shed