



**Independent Regulatory Commission
Administrative Order
1/2011**

Document Ref: R. W. Beck's Final Report On Strengthening DOMLEC's Power System

This Administrative Order is made by the Independent Regulatory Commission (hereafter referred to as the Commission) in exercise of the powers conferred on the Commission by Section 41 of the Electricity Supply Act 10 of 2006 (the Act) of the Commonwealth of Dominica.

1. This Order may be cited as the: **Dominica Electricity Services Ltd. (DOMLEC) Strengthening Of DOMLEC's Power System Order**
2. **Whereas** pursuant to part three (III), Section 19, 20 (c), (h) and 21 (1) (c) (d) of the Electricity Supply Act of 2006 and a series of nationwide blackouts during August and September 2009, the Commission advised DOMLEC and the public of Dominica that it would have been conducting an investigation of DOMLEC's Power System with a view to making recommendation to strengthening it; and
3. **Whereas** the Commission contracted the consulting firm R. B. Beck, an SAIC Company, of 1801 California Street, Suite 2800, Denver, CO 80202 on September 29, 2010 to investigate DOMLEC's Power System and make recommendations for its strengthening; and
4. **Whereas** R. W. Beck's investigation involved analyzing pertinent technical data receive form DOMLEC by the IRC and R. W. Beck, and field visits by a representative from R. W. Beck accompanied by the Utility Engineer of IRC;
5. **Whereas** R. W. Beck's study took three months to conclude during which time an Interim Report on DOMLEC's Power System was shared with DOMLEC for comments which were noted: and
6. **Whereas** the recommendations were discussed with DOMLEC at a meeting between the IRC and DOMLEC held in the Commission's Board Room on May 13, 2011; and
7. **Whereas** S.41 of the ACT provides "*The Commission shall, by notice, published in the Gazette, issue such other administrative orders and rules as are necessary for exercising its powers and performing its duties in the implementation of policies under this Act*"

8. **The Commission** now **ORDERS** that Dominica Electricity Services Limited (DOMLEC) to implement all the recommendations contained in Appendix A which is attached to this order.

9. **For the avoidance of doubt the effective date by which the Commission expects the implementation to begin is June 30, 2011.**

BY ORDER THE INDEPENDENT REGULATORY COMMISSION

Lancelot McCaskey

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Lancelot McCaskey
Executive Director
June 17, 2011

Appendix A

1. Resolve its fuel inventory management practices and problems by:
 - i. Ensuring that all its fuel dipsticks are properly calibrated and certified by the Dominica Bureau of Standards. A copy of the certificates issued by the Dominica Bureau of Standards must be submitted to the Commission no later than July 31, 2011.
 - ii. Procuring, installing and calibrating the correct fuel intake meters for all operational generators at its Fond Cole and Sugar Loaf Generation Stations. These must be certified the Dominica Bureau of Standards. Copies of the certificates issued by the Dominica Bureau of Standards must be submitted to the Commission no later than August 15, 2011.
 - iii. Standardizing the dimensions of all pipes leading into and from the Bulk Meters while performing ii. This must be reported to the Commission by August 15, 2011
 - iv. Redesigning the installation of their fuel meters to include T-joints at the entry and exit of the meters in order to facilitate calibration. This must be done while performing ii. This must be reported to the Commission by August 15, 2011.
 - v. Providing schematic designs and specifications of all the tanks that have dip-sticks in order to establish the accuracies of the dip-sticks. *Note that dip-sticks are uniquely designed and calibrated for a specific tank based on the shape and dimensions.* This must be done by July 31, 2011.
 - vi. Establishing and implementing a calibration schedule for all its fuel meters at least every quarter. This must be reported to the Commission by August 15, 2011.
 - vii. Reporting the monthly fuel usage figures by both the dipping method and the generators fuel intake meters readings from September 15, 2011 and thereafter to accompany the monthly report on the calculation of the fuel surcharge for the previous month.
2. Submit a copy of the Loss Reduction Report prepared by R. W. Beck in 2005 to the Commission by June 30, 2011.
3. Submit a report on the steps taken so far to implement the recommendations of the Loss Reduction Report by July 15, 2011.

4. Submit to the Commission the algorithm used to determine the various losses experienced from month to month. This to be done by June 30, 2011.
5. Develop written planning criteria that are consistent with the Electricity Supply Act No. 10 of 2006 and which are approved by DOMLEC's senior management, and submit them to the Commission by July 31, 2011, and thereafter at the beginning of every calendar year.
6. Conduct pertinent studies to determine whether DOMLEC's transmission and distribution systems conform to such criteria and the specific circumstances where the criteria are violated, and report the findings to the Commission by August 31, 2011 and thereafter on December 31, of each year.
7. Identify capital and operating projects, procedures and related cost estimates to resolve such planning criteria violations and submit them to the Commission by December 31st of each year.
8. Complete, develop and report on a load flow input database, which should include focus on 11KV to the Commission by September 30, 2011.
9. Complete, develop and report on a load flow input database focusing on 400 V to the Commission by December 31, 2011.
10. Conduct load flow studies on every distribution feeder to identify overloaded conductors, overloaded transformers, voltage excursion and lightly loaded transformers. These should be conducted once a year and reported to the Commission by the end of each calendar year.
11. Prepare an annual report that summarises the findings of the load flow analysis and send a copy of that report to the Commission by the end of every calendar year.
12. Continue to roll out the AMI programme until all electro-mechanical meters are removed from the system. The status at the end of each calendar year must be reported to the Commission.
13. Continue to identify and replace lightly loaded transformers. A report on this exercise must be submitted to the Commission at the end of each calendar year.
14. Continue to identify and replace older feeder segments. A report on this exercise must be submitted to the Commission at the end of each calendar year.
15. Utilize AMI meter data to control customer and feeder voltages and submit an annual report to the Commission on this exercise.

16. Conduct dynamic voltage dip studies with transient stability analysis, and report to the Commission by October 31, 2011 and ever month thereafter.
17. Conduct steady state voltage dip studies with load flow analysis and report to the Commission by October 31, 2011 and at the end of every month thereafter.
18. Establish a system model adequate to perform short circuit analysis.
19. Conduct short circuit analysis on an annual basis or as significant modification are made to the system, and report the findings to the Commission at the end of every calendar year.
20. Submit a copy of the protection study to the Commission by June 30, 2011 or any other date on which it is received.
21. Monitor SAIFI and SAIDI at the feeder level and report on the results on a monthly basis beginning August 31, 2011.
22. Acquire whatever software is pertinent to conduct optimal generation dispatch and unit commitment that can accommodate the characteristics of DOMLEC's system. This must be done by March 31 2012.
23. Develop an accurate heat rate and marginal cost database for all the generating units and advise the Commission on its completion by March 31, 2012.
24. Develop and implement an economically efficient dispatch schedule which must be shared with the Commission on a weekly basis.