

## **OUR ISSUES DIRECTIVES TO JPS AFTER APRIL POWER OUTAGE REVIEW**

**(KINGSTON, Jamaica; 2016 November 16):** Following its assessment of the April 2016 power outage, the Office of Utilities Regulation (OUR) has issued several directives to the Jamaica Public Service Company Limited (JPS) to help improve its systems and prevent future such occurrences.

The directives are contained in a report prepared by the OUR in keeping with its mandate to provide its own analyses of the issues and causation leading to the outage event; and review circumstances prior to, during and after the outage as well as its findings and recommendations. The OUR has also completed an interim report on its investigation into the August outage which has so far indicated a number of common causes between the outages. The public will be provided with an update on the interim findings into the August outage next week.

The OUR has instructed JPS to provide it with an action plan on the implementation of all of its recommendations which should include specific time frames for their completion. This is to be provided within thirty (30) days from November 8, 2016 the date of JPS' receipt of the OUR Report.

For the longer term, the OUR has instructed JPS to develop coordinated long term generation and transmission plans to address existing transmission system constraints.

The OUR's review identified the main cause of the system outage as a lack of situation awareness on the part of JPS' outage management, operational and field personnel involved in critical aspects of the management of the outage. It found that there was insufficient risk assessment carried out prior to the planned outage.

The OUR investigation team also determined that the outage, although planned, was poorly managed and executed. It highlighted as examples, that JPS did not provide an outage plan including clear lines of authorization, communication, management and functional responsibilities for the outage activities. The OUR further observed that although the planned outage started after a delay of almost four hours, there was no commensurate scope adjustment to reduce the probable system impact of the late start.

The OUR issued several directives to JPS geared at preventing or minimizing the recurrence of such events. Among other things, the OUR has asked JPS to:

1. Take immediate actions to correct the direct cause of the outage and provide the OUR with evidence that specific actions were taken to fix the problems identified and that the system is being operated in a reliable manner. The company is also required to clearly enunciate the direct cause of each problem identified and present a solution for each, along with an implementation schedule and costing where applicable.

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2. Develop a set of criteria to identify facilities, the reliable operation of which are critical to system reliability and security.
3. Ensure that the communication issues identified are corrected and that equipment defects are addressed as a matter of priority.
4. Ensure that all major transmission outages are properly planned and coordinated to reduce the system exposure to undue security risks.
5. Ensure that system operators are properly trained and certified in outage management by industry recognized institutions in order to be able to prudently operate the system under contingencies and emergency conditions.
6. Ensure that system operators and controllers fully understand the system operating criteria and adhere to the requirements of the Generation Code to prevent violations of operating requirements under normal and abnormal conditions.
7. Ensure that outage managers and supervisors are properly trained and certified in outage management by industry recognized institutions and are able to understand the relationship between system reliability, and outage impact on system operations.
8. Ensure that online and offline simulation tools are properly calibrated and personnel are properly trained to carry out extensive contingency analyses and are able to make informed decisions based on those analyses.
9. Review communication protocols between field personnel and system operators and put in place adequate means of contacting outage managers and supervisors during outage situations.
10. Engage independent consultants to conduct a detailed review of its outage management systems, from planning to field execution and to develop plans to address the deficiencies identified.
11. Conduct a detailed review of generator over and under frequency trip settings, to implement appropriate time delay tripping of generating units to prevent all plants from tripping at the same frequency in order to minimize the risks of rapid cascading outages.
12. Take appropriate measures to improve the complement and competence of staff in the protection and control department.
13. Conduct a detailed review of maintenance practices for protection equipment and take the necessary actions to improve maintenance of protection systems.
14. Ensure that all black start and standby generators are properly maintained and periodically tested and reported.
15. Fix remote operating equipment that did not operate correctly during the restoration process.
16. Ensure that the system control centre staff conduct regular practice drills to improve the restoration process.

The OUR's full report into the investigation on the 2016 April power outage can be found on the OUR's website: [www.our.org.jm](http://www.our.org.jm).

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### **BACKGROUND**

On Sunday 2016 April 17 at 6:59 pm, the electric power system experienced a major system failure which separated the power grid into two subsystems namely; corporate and rural area subsystems. The rural area eventually suffered a total blackout, while the corporate area survived after intermittently losing some of its customers.

JPS reported that there was a planned outage of the two 69 kV transmission lines Hunts Bay-Port Authority of Jamaica and Hunts Bay-Duhaney on that day, to facilitate road works being under taken by the National Works Agency. These two lines emanated from the Hunts Bay power station in the corporate area, the largest load centre on the island.

The outage was planned to start at 7:00 am and be completed at 6:00 pm, before the onset of the evening peak, but did not start until 10:55 am, an almost four-hour delay. The OUR confirmed that the initiating event that triggered the outage and separation and the subsequent blackout of the rural area, occurred at 6:59 pm when the Hunts Bay-Three Miles line tripped while carrying in excess of 720 Amps or 86 MVA. This triggered a number of events, which resulted in the inability of the rural area system to survive the massive generation load imbalance.

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