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TNB-Report
FAULTY COMPONENT IN CIRCUIT BREAKER CAUSED BLACKOUT

KUALA LUMPUR, Aug 21 (Bernama) -- A faulty component in the 275 kV circuit breaker at the Paka Power Station switchyard in Terengganu had led to the peninsula-wide power failure on Aug 3, according to findings by Tenaga Nasional Berhad (TNB).

This was stated in its report to the Cabinet, which was made public today by Energy, Telecommunications and Post Minister Datuk Leo Moggie.

This is the second report submitted to the Cabinet by the national utility company. Prime Minister Datuk Seri Dr Mahathir Mohamad was dissatisfied with the interim report submitted to the Cabinet two weeks ago.

Moggie said the government still wanted an independent consultant to investigate the incident, the second major power failure to have hit the country since 1992.

He said the Cabinet also discussed the possibility of giving rebates to consumers affected by the blackout which lasted more than 12 hours. However, the Cabinet felt that it needed further studies, including taking a look at the practice in other countries.

"You may recollect that quite recently there was quite an extensive blackout in the western part of the United States, how they handled it, what happened there...these are the questions the Cabinet feel should also be examined and studied first as part and parcel of how we handle the question of expressing sympathy for the loss suffered by consumers," he said.

Moggie believed that the Finance Ministry was on the verge of appointing the independent consultant but he could not say whether its report would also be made public.

Moggie declined to answer questions on the TNB findings.

"I am only releasing to you what TNB has given and it is free, you read it, they have an executive summary and they have a full text, they have the appendix here," he said.

According to the TNB report, the national power grid collapsed due to a set of events triggered by the faulty component in the circuit breaker.

The subsequent operation of protective relays led to the automatic disconnection of the generating sets at the TNB and YTL Power Stations at Paka. The latter is an independent power producer.

In the first contingency measure to restore generation supply, the gas turbine generating units inadvertently suffered sudden shutdowns and the second contingency effort involving automatic loadshedding also failed due to too massive loss of generation.

The report also drew attention to the high proportion of gas turbine units in the national grid system. This, it said, was a major concern to the utility company and industry with regards to the electricity supply system reliability.

The large number of gas turbine units, which have unpredictable performance during system disturbances, had drastically altered the power system dynamic performance during major disturbances.

While adjustments were being made to accommodate the gas turbine units, the system security and reliability should take precedence over economic operation, the report said.

"Therefore the government will have to take note of the existing commercial arrangements in the context of the present situation," it said.

The issue on the large number of gas turbine units dominated the nine recommendations and action adopted by TNB after the outage.

They were:

*Increasing the quantum in the automatic load-shedding scheme from 1,579 megawatts to 2,000 megawats to reduce the risk of inadvertent tripping of gas turbine units;

*Introducing two additional stages of automatic load-shedding to enable load to be automatically disconnected earlier so that the drop in frequency would be arrested before the running gas turbines in the system would pick up the generation deficit and risk the probability of inadvertent trippings;

*All circuit breakers of similar type are being inspected to prevent occurrence of similarly faulted units;

*A review of the protection setting at major power stations critical to the reliability of the system;

*Reduce the quantum of generation output from gas turbine-dominated power stations to reduce risk of major system failure in the event of a fault at those stations or elsewhere;

*Review of gas turbines performance characteristics initiated through the Malaysia Grid Code committee. The large number of units connected to the national grid requires greater understanding of its behaviour performance in order to optimise system security and reliability vis-a-vis economics of operations;

*Increase the quantum of spinning reserve with a higher proportion fron non-gas turbine generation;

*Reducing the generating level and ensure more dispersal of generation throughout the whole network;

*Immediate detailed investigation of gas turbine performance during falling frequency conditions within TNB and the IPPs power stations with the relevant manufacturers to further explain and understand the phenomenon observed. -- BERNAMA

AFY YBY