

1 Q. Please confirm that in the contract for the converter station equipment the
2 guaranteed forced bipole outage rate of the HVdc scheme is 0.1/year; that this
3 number of bipole outages does not include outages caused by the HVdc overhead
4 line, electrode line or HVdc cables, nor outages caused by operator error; the
5 number of outages is measured and averaged over 3 years, and in the event of a
6 failure to meet the average of 0.1 bipole outages the converter manufacturer is
7 allowed to extend the monitoring period for another 12 months, and to then
8 choose the best 3 years as the measurement of performance before penalties are
9 applied.

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12 A. A bipole outage is defined as an outage that causes a reduction in the bipole dc
13 system power transfer capacity greater than the power rating of one pole. The
14 guaranteed bipole forced outage rate is 0.1 or less outage per year. Bipole outages
15 do not include outages caused by the HVdc overhead line, electrode line or HVdc
16 cables, or outages caused by operator error.

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18 When calculating if the reliability requirements have been met, if one or more
19 bipole outages have occurred during the first three years, the Performance
20 Guarantee Assessment Period is extended for an additional 12 months. After this
21 additional 12 month extension, the 12 worst consecutive months are then omitted
22 from the calculation. If one or more bipoles outages have occurred outside the 12
23 months period, Contractor must correct deficiencies and defects at no cost to
24 Company. Once corrected, there is a further two year evaluation period (which
25 excludes results of the previous four year period and the period for correcting such
26 deficiencies) to verify if guaranteed reliability is met. If one or more bipole outages
27 have occurred during the two years, penalties are applied.