Q. On pg. 21 of Exhibit 106, in reference to the corridor for 230 kV lines, TL202 and TL206, it is stated: *"It is difficult to determine the exact return period due to the lack of meteorological data along the corridor, loading data on the transmission lines, and actual line failures of TL202 and TL206. Based upon the analysis completed for the Avalon Upgrades and the lack of a structural failure on either TL202 or TL206, it is assumed that the design of each line is in the order of 1:25 years."*

The table on pg. 155 of Exhibit 85 clearly shows a structural failure of both TL202 and TL206 in February, 1970, due to wind and ice.

Please explain this discrepancy.

A. The structural failure that occurred on TL202/206 in February 1970 occurred at the eastern end of the transmission line in the vicinity of the Sunnyside Terminal station. This area, which is exposed to meteorological conditions similar to those experienced elsewhere in the Avalon area, is not indicative of the conditions experienced on the remainder of the transmission line route for TL202/206.

Table 2.1 of Exhibit 85 provides the design wind and ice loads for the Bay d'Espoir project. TL202/206 are in the Normal Zone[1], so the applicable design criteria are:[2]

Radial Ice in inches (mm)	Gust Wind Speed in mph (km/hr)
1.0 (25)	0 (0)
0.5 (13)	73 (117)
0 (0)	110 (176)

[1] Exhibit 85, Figure 2.1, page 35
[2] Exhibit 85, Table 2.1, page 33

Exhibit 87 describes an assessment of probabilistic climatic loadings on TL202/206, and Table 6 of Exhibit 87 indicates that the modeled ice loadings corresponding to a 10, 25, and 50 year return period are 31, 39, and 45 mm respectively along much of the TL202/206 route.[3]

The design ice loading for TL202/206 corresponds to a modeled 1 in 10 year return period, but the operating performance of the line (notwithstanding the failure in the Avalon area) has been good for over 40 years of operation. There is, however, a lack of meteorological data, a lack of loading data, and also a lack of actual failures along the majority of the route. Consequently, a 1:25 year return period has been assumed.

[3] Referring to Figure 6 of Exhibit 87, much of the route is in the 200 to 250 m elevation range, so the 183 m elevation is selected from Table 6.