- MF1250_filed (Numerical modeling of MF structures, SNC-Lavalin - 2008) (Note 4)
- MF1330 Report 2_filed (PMF & Construction Flood, HATCH - 2010 update) (Note 5)

Note 1: For Round Pond development, the 1988 Feasibility Study report by Shawinigan/Fenco (SF) is available. This study did not carry out any hydrological analyses as these were readily available. A model of the Bay d'Espoir system had been developed by N&LH and they carried out the natural inflow reconstitution (1950-1986) and the energy studies of Round Pond. In 1985, N&LH carried out Bay d'Espoir Flood Analysis and Alternatives Study and derived a PMF to route through Round Pond spillway. Since the SF study is more than 20 years old, I propose to meet with with N&LH representatives in order to assess the need to upgrade the hydrology and identify any new development that they may have made in the modeling of the Bay d'Espoir system and/or the PMF estimation methodology or data update.

Note 2: The report "Studies for Portland Creek", (2006) by SNC-Lavalin contains the latest hydrological analysis and no supplementary document is required. Review of hydrology indicate that provided there is sufficient regional information, the spillway design flood estimate can be improved by adopting an Index Flood Method rather than an at-site analysis as done in the study. The analysis is based on 22 years of flood peaks to yield the 1:1,000-year flood. Typically, the range of credible extrapolation for annual exceedance probability is 1:100 to 200-year return period when using at-site streamflow data while it is 1:500 to 1:1,000-year when using regional streamflow data. Also, the report states: "Since the downstream flood zone is unoccupied consequences from a possible dam failure would be minimal." Is this likely to be the case in the future or is there potential for downstream development?.

Note 3: The variant studied is one of those presented in SNC-AGRA 1999 Report. Since then, some of the parameters have changed, in particular the PMF and construction flood. So at least the spillway characteristics are likely to change.

Note 4: The curved wall recommended in the study next to the power intake in order to improve flow profile must be optimized to minimize costs.

Final optimization of the layout should be performed by numerical and/or physical modeling after the review of the layout based on an update of the hydraulic conditions

Note 5: It was not within this study's scope of work to undertake a detailed spillway design optimization. As recommended in GI1141 (Hatch 2009), the HEC-RAS model should be used to test variants in finalization of the spillway design. Report GI1141 is not on the sharesite.