

## KCB RESPONSES TO PUB INFORMATION REQUESTS

**PUB (MGF) -1 to 4** - No KCB response needed

### **PUB (MGF) – 5**

- a) Remaining risks related to geotechnical issues, relate mainly to changed conditions: foundation conditions being different than were assessed; and construction materials being not available in the quantity and quality that were estimated. A second group of risks relate to weather: the construction season being significantly wetter and/or shorter than were assumed for scheduling, which results in design changes, e.g. to accommodate wetter construction materials, or results in earthworks being performed in freezing conditions. KCB did not review the basis of Amending Agreement 7 or the current forecast in detail; we are unaware of exactly how costs and schedule (including contingencies) were developed. However, the geotechnical risks would be unchanged from the time of the original cost estimate and schedule for those portions of the earthworks which have not been performed to date.
- b) Refer to Appendix A, KCB report, page 12, where potential impacts are described. Regarding the brittle deformation zone: the limited information (from one drill hole) indicates that the zone was “healed”, i.e. is essentially a strong rock mass. No water pressure testing was performed in the zone. On the basis of this limited information, it is KCB’s assessment that the impact on earthworks and concrete would be negligible. A possible schedule/cost impact could arise, if the zone was relatively permeable and control of water in the cofferdam foundation was difficult. Regarding the ductile deformation zone: If this zone comprises relatively weak/soft materials, additional excavation and replacement with fill or concrete in and adjacent to the zone could be required; and schedule/cost could be impacted if the zone was relatively permeable and control of water in the cofferdam foundation was difficult.
- c) As noted in KCB’s report, no investigation of the ductile deformation zone was performed; such investigation would have permitted a quantitative assessment of the zone conditions and their potential impacts on construction. A more thorough investigation of the brittle deformation zone (additional drill holes; water pressure tests) would have permitted a better assessment of conditions and their potential impacts.

### **PUB (MGF) – 6**

- a) KCB is not aware of exactly how MH developed the costs. Typically, the initial costing would be developed based on quantities and unit rates for items such as excavation, concrete volumes, fills and rockwork and lump sums for turbines, gates and other mechanical and electrical equipment. The lump sums are often based on suppliers’ budget quotes with some escalation.

- b) The quantities were reasonably accurate relatively early in the project, thus if the unit rates were appropriate, the cost estimate for the GCC would have been much closer to the actual costs.
- c) Without knowing exactly how MH prepared the cost estimate we are unable to reasonably suggest improvements to their cost estimating process.

**PUB (MGF) – 7**

- a) KCB did not review in detail the early contractor involvement; thus, we are unable to answer the question.
- b) KCB does not know exactly why the unit prices were changed in 2016. We assume the productivity at site was part of the reasoning. Logistical aspects (material delivery; staffing) may have also contributed.

**PUB (MGF) – 8**

- a) There are some incentives, penalties and modifications to the contract pricing based on the target price as discussed on the KCB report pages 33 and 34, thus eventually the target price calculation based on quantities may have a cost impact. However for the majority of the work the quantities are not linked to the regular payments as identified on pages 33 and 34
- b) N/A
- c) KCB's comments are clearly provided on pages 33 and 34 of their report.
- d) N/A
- e) N/A

**PUB (MGF) – 9 to 16** No KCB response needed

**PUB (MGF) – 17**

Unfortunately, the information is confidential at this time.

**PUB (MGF) – 18 to 25** No KCB response needed