JK#6

Management Reserve

Yesterday we spoke about the inclusion of strategic risks and "unknown-unknowns' in management reserve. We discussed the interpretation of the definitions PMI offered. On closer examination I noted that PMI PMBOK does not provide a definition for unknown-unknown. As I indicated, Nalcor endeavoured align its terminology with the practices of AACE, who are the a globally recognized body of cost engineering expertise. Nalcor's Project documents reaffirms this intention.

Having reflected on our discussion, I would like to clarify my understanding and reaffirm the basis used as input to the DG2 CPW analysis.

Option decision analysis, as used in the CPW analysis for DG2, is predicated upon using expected value inputs for all cost items, inclusive of capital, operating cost, oil price, financing rates, etc.

In the case of capital cost, the expected value is that cost that is expected to be spent – i.e. the Base Estimate and Contingency, since by definition Contingency is meant to be spent. It should not include management reserve.

As is any reserve, it is a fund used to provide a higher level of confidence and provides for the ability to address issues or events that may arise in the future.

AACE definitions for both Contingency and Management Reserve appears to have remained consistent over the past 10+ years, as contained within RP10S-90: Cost Engineering Terminology.

Regarding Contingency, AACE® International it as:

> *"An amount added to an estimate to allow for items, conditions, or events for which the state, occurrence, or effect is uncertain and that experience shows will likely result, in aggregate, in additional costs. Typically estimated using statistical analysis or judgment based on past asset or project experience.* ***Contingency usually excludes****: 1) Major scope changes such as changes in end product specification, capacities, building sizes, and location of the asset or project; 2) Extraordinary events such as major strikes and natural disasters; 3)* ***Management reserves****; and 4) Escalation and currency effects. Some of the items, conditions, or events for which the state, occurrence, and/or effect is uncertain include, but are not limited to, planning and estimating errors and omissions, minor price fluctuations (other than general escalation), design developments and changes within the scope, and variations in market and environmental conditions. Contingency is generally included in most estimates, and is* ***expected to be expended****."*

They define Management Reserve as:

> *"An amount added to an estimate to allow for discretionary management purposes outside of the defined scope of the project, as otherwise estimated. May include amounts that are within the defined scope, but for which management does not want to fund as contingency or that cannot be effectively managed using contingency."*

I note that this definition does not include reference to "unknown-unknowns". Quantifying unknowns is impossible, since we do not even aware of their existence.

Contrary to AACE's definition of Contingency, this definition does not imply that Management Reserve will be spent. As such, it has and continues to be my understanding that since Management Reserve it is not part for the project baseline budget, and not planned to be spent, and thus should not be included in the expected cost used in CPW analysis.

For MFP, Nalcor, with guidance from Westney, attempted to quantify the potential requirements for Management Reserve. As was discussed yesterday, Management Reserve in turn was to be funded by Contingent Equity, hence attempts by Nalcor's financing team in fall 2010 to land upon a number for CPW sensitivity checks.

As documented in the DG2 and DG3 risk report, Management Reserve was assessed by evaluating the financial exposure that Strategic Risk added. There was some discussion as to whether this was correct. I refer you to AACE's definition of Strategic Risks, which states that they are:

> *"A risk for which the potential impact threatens a project objective, even if the probability of occurrence is low or risk matrix severity rating is within screening thresholds. In projects, these risks are generally funded through **management reserves.**"*

As stated here, Strategic Risks, should they occurred, are expected to be funded Management Reserve, which is aligned with Nalcor's approach. AACE's definition of Contingency explicitly excludes Management Reserve. And as we know, Contingency, as part of the project budget, is cost expected to be spent, and as such should not include Strategic Risk exposure. As stated, my understanding has and continues to be that option analysis using CPW is based upon expected value inputs, with the what-ifs for each option, such as requirements for Management Reserve, are addressed using CPW sensitivity checks

From a project planning viewpoint, understanding the potential need for capital reserves is important, hence Nalcor's attempt to quantity reserves values as detailed in the DG3 QRA report. When executing a major capital project, it is generally understood that significant capital reserves must be in-place to back the occurrence of any risk event not covered within the Contingency, be that known-unknowns and unknown-unknowns. For financed projects, coverage for these events is via Contingent Equity.