

**From:** [Emiliano Mancini](#)  
**To:** [Richard Noble \(Richard.Noble@ca.ey.com\)](#)  
**Cc:** [David Steele](#)  
**Subject:** Notes on Craig's report to Oversight Committee  
**Date:** Thursday, November 27, 2014 4:22:00 PM  
**Attachments:** [image001.png](#)  
[Craig's report - feedback.xlsx](#)  
[AACE and contingency reference.pptx](#)

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Hi, please see my comments attached. I had to use an excel file as I had only the hardcopy of the report.

Reference to AACE-I and contingency are also attached.

Regards,



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| # | REPORT'S REFERENCE   | COMMENT   | ADDITIONAL QUESTION  |
|---|--|---|--|
| 1 | Pag 9 first paragraph " Nalcor anticipates that the Intergrated Cover System...will be completed by end of November allowing work to continue into Winter 2014-2015" | Completion of ICS is delayed and will not be completed by end of Nov (as per site visit). Astaldi is currently installing structural steel and external insulation.   | How's the delay on the ICS affecting the plan to work in the powerhouse during Winter 2014-2015? What's the estimated delay?             |
| 2 | Pag 10 first paragraph - after the question "what actions are being undertaken to address these delays" include additional questions                                 |   | Was the risk of delay to erect the ICS identified in the risk register? Were risk responses assessed?                                    |
| 3 | Pag 10 "Construction of the North and South Dams, Committee Questions" include additional questions after question 1.  |   | Does the IPS indicate the contract award date? Is the award date directly linked to construction phase (dependencies properly in place)? |
| 4 | Pag 10 "North Spur Stabilization Works, Committee Questions" include additional questions after question 1.  |   | Does the IPS indicate the contract award date? Is the award date directly linked to construction phase (dependencies properly in place)? |
| 5 | Pag 11 include additional question after Committee Question #3   | Question #3 impacts to resource mgmt plan and budget should also be included (not just schedule)  | What's the available float remaining?  |
| 6 | Pag 17 "Summary of Incurred Vs. Planned Costs Table"   | the following 3 columns should be added to the table:<br>EV<br>SV = EV - PV<br>CV = EV - AC (actual cost or incurred cost)<br>and / or CPI and SPI  |  |
| 7 | Pag 18 "Summary Project Budget vs Project Forecast Cost Table"   |   | How are the Project Forecast Cost figures calculated? Do they take into account project past performances and approved changes?          |
| 8 | Pag 24 "Contingency Budget"  | Nalcor referred to AACE-I with regard to cost estimate and contingency. It has to be noted that the accuracy range provided by AACE-I represents typical percentage variations of actual costs from the cost estimate AFTER application of contingency (typically at a 50% level of confidence) for given scope. See AACE-I table attached to the email.<br><br>Contingency should be estimated using statistical analysis (MonteCarlo simulation) or judgment based on past asset or project experience. See additional definition of project contingency attached to the email. |  |

# Cost estimate classification matrix and variability of accuracy ranges

CIMFP Exhibit P-03301

Page 3

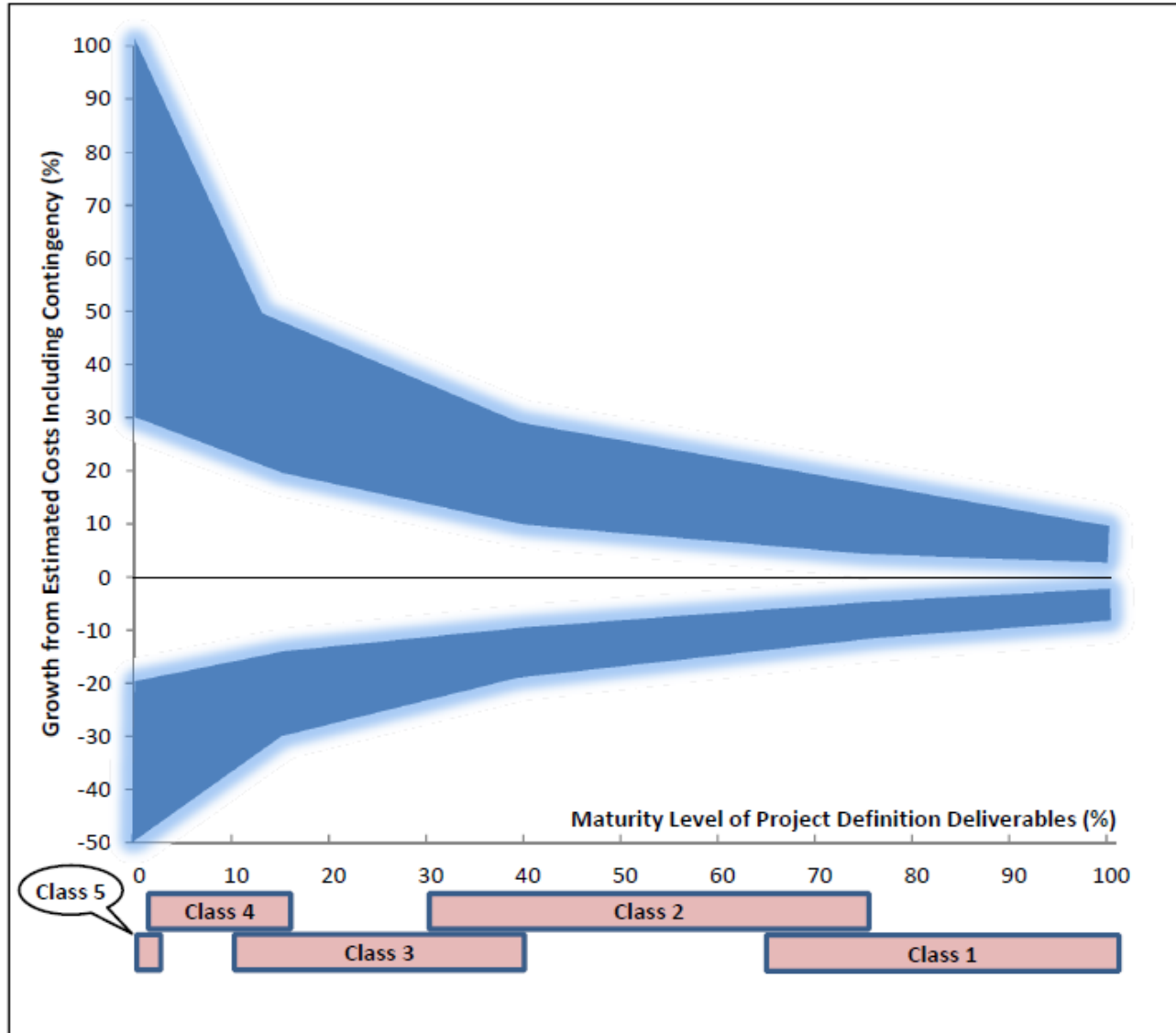
|                       | <i>Primary Characteristic</i>   | <i>Secondary Characteristic</i>                 |  |   |
|-----------------------|---|---|--|---|
| <b>ESTIMATE CLASS</b> | <b>MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES</b><br>Expressed as % of complete definition | <b>END USAGE</b><br>Typical purpose of estimate | <b>METHODOLOGY</b><br>Typical estimating method            | <b>EXPECTED ACCURACY RANGE</b><br>Typical variation in low and high ranges <sup>[a]</sup> |
| Class 5               | 0% to 2%  | Concept screening                               | Capacity factored, parametric models, judgment, or analogy | L: -20% to -50%<br>H: +30% to +100%   |
| Class 4               | 1% to 15%   | Study or feasibility                            | Equipment factored or parametric models                    | L: -15% to -30%<br>H: +20% to +50%  |
| Class 3               | 10% to 40%  | Budget authorization or control                 | Semi-detailed unit costs with assembly level line items    | L: -10% to -20%<br>H: +10% to +30%  |
| Class 2               | 30% to 75%  | Control or bid/tender                           | Detailed unit cost with forced detailed take-off           | L: -5% to -15%<br>H: +5% to +20%  |
| Class 1               | 65% to 100%   | Check estimate or bid/tender                    | Detailed unit cost with detailed take-off                  | L: -3% to -10%<br>H: +3% to +15%  |

Notes: [a] The state of process technology, availability of applicable reference cost data, and many other risks affect the range markedly. The +/- value represents typical percentage variation of actual costs from the cost estimate after application of contingency (typically at a 50% level of confidence) for given scope.

# Cost estimate classification matrix and variability of accuracy ranges

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# Definition of Project Contingency

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Relevant examples of project contingency definition:

- ▶ 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 (source: AACE-I)
- ▶ Budget within the cost baseline or performance measurement baseline that is allocated for identified risk for which contingent or mitigating responses are developed (source: PMBOK Guide, PMI)
- ▶ Estimate contingency is defined as a special monetary provision in the project budget to cover uncertainties or unforeseeable elements of time/cost in the estimate associated with the normal execution of a project, for example, labour rates and design development. Estimate contingency is calculated using a risk model with input from a knowledgeable team. Event contingency is defined as a monetary provision in the project budget to cover the costs associated with the occurrence of one or more specific risks (source: IPLOCA “The Road to Success”)