



Refurbishment – Lessons Learned

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Bruce Units 1 & 2 Restart Project



INFORMATION GATHERING

- **Bruce Units 3 & 4 Restart**
- **Pickering Unit 4 Restart**
- **Pickering Unit 1 Restart Preparation Work**
- **Large range of international nuclear projects – strategies / actions adopted**

TWO COMPONENTS

- Identify things that were done right or the **SUCCESSSES**
- Identify the things that needed improvements or **OPPORTUNITIES**

COMMON ISSUES

- **Inadequate project governance arrangements**
- **Lack of Integrated Schedule**
- **Untimely mobilization of construction forces**
- **Inadequate cost and performance reporting**
- **Inadequate assessment of scope**

COMMON ISSUES (cont'd)

- **Inadequate commercial terms with contractors (time and material)**
- **Issues with multiple QA standards**
- **Conflicting priorities for resources**
- **Operational procedures not fitted to construction-oriented processes**
- **Documentation didn't reflect as-found condition**

RESULT

- **Stakeholder relationship building**
- **Comprehensive condition assessments**
- **Project Management Contractor**
- **Fixed-price contracts (incentives / delay charges and guarantees)**
- **Ring Fencing the Project - physically and managerially**

RESULT (cont'd)

- **Service Level Agreements for services from operating business**
- **Increased focus on integrated schedule**
- **Executive committees for oversight and governance**

SUMMARY

- **Significant structural changes will create new / different challenges from Bruce 3 & 4 and Pickering**
- **Lessons learned need to be captured from the onset of the Project at a Manager Control level**