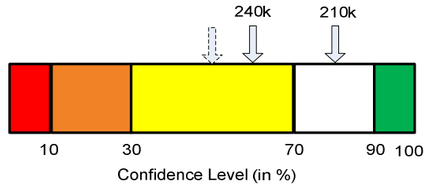
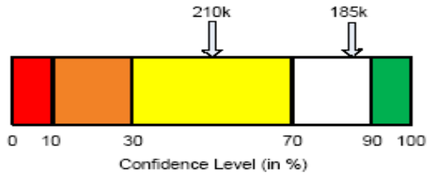
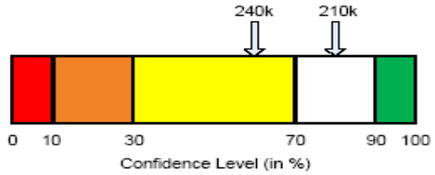
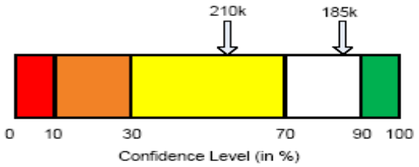
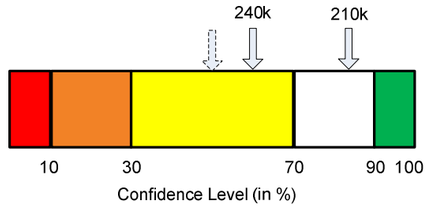
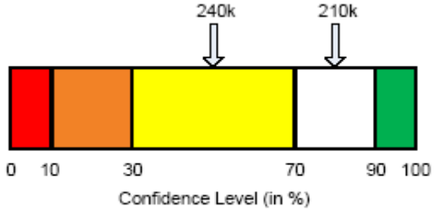
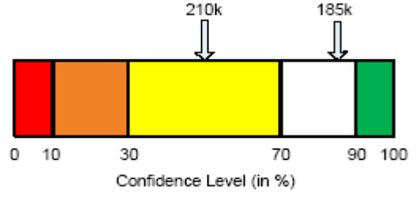
ISSUE & HIGHLIGHTS	INSPECTION RESULTS	FCLM PROJECT RESULTS	IMPACT ON CONFIDENCE LEVELS	CONFIDENCE LEVEL CHANGE	PICKERING B CONTINUED OPERATION	DARLINGTON
Deuterium Ingress and its Impact on Material Properties						
Project Objective Establish fracture toughness and deuterium ingress rate at high [Heq] level. **Mitigating Action** Burst test at [Heq] and refine hydrogen ingress model for BOT and at RJ.	Recent Rolled Joint scrapes show continued variability of D uptake, with more results at lower levels. D3Q13 showed RJ D uptake lower than P6M14 RJ D uptake data. Inlet D uptake sometimes higher than outlet D uptake which is not expected. Updated analysis, with new Pickering B flux based BOT D uptake model showed that at Pickering B, TSSD is reached at 264kEFPH at BOT and at 240kEFPH at RJ.	Burst test (BT-9) showed results within the expected range. Latest test results showed that the electrolytic hydriding technique can be used to produce 100ppm [Heq] samples, with no recovery. Data needs to be verified in the next quarter. Recent test data suggest higher D uptake rates (in localized area), once [Heq] has exceeded TSSD concentration.	Updated modelling of Pickering B uptake rates is favourable. Recent RJ hydrogen results were lower than expected (+ve). Do not understand higher D uptake in some Inlet D RJs (-ve). Burst tests indicate there may be more factors influencing fracture toughness than just [Heq] (factors which are +ve).	↑ Improving		
Crack Initiation						
Project Objective **To develop and validate better flaw assessment models** **Project Risk** -Practicality and feasibility of conducting irradiated material fatigue test in water environment is questionable, but has been requested by the CNSC **Mitigating Action** -Third party review of OPG-proposed fatigue crack initiation program	No crack initiation has been observed via inspections of flaws in any Canadian CANDU plants.	Developed proposal to establish technical basis for fatigue test program that does not require tests on irradiated material in water environment. (tests would be very expensive and time-consuming) Third party review of the project fatigue program is underway. PO issued.	Too early in project to have an impact on Confidence level, as more data is needed.	↔ Neutral		
Probabilistic Core Assessments and Leak-Before-Break (LBB)						
Project Objective To develop and validate core assessment methodologies	No pressure tube leaks. No crack initiation observed via inspections in any Canadian CANDU plants. Updated Pickering B deterministic assessments, using updated axial DHC Rate, has shown that LBB is supported to 240kEFPH.	Specification documents for core assessment tools/ software approved.	Updated Pickering B LBB assessment shows improved result. Too early in FCLM project to have an impact on Confidence level, as we need the rest of program to successfully develop improved models/criteria to drive assessments.	↑ Improving		
Spacer Integrity and PT/CT Contact						
Project Objective Manage the impact of spacer degradation on PT/CT contact. **Operations Risk** -PT/CT gap data collection impacts on outage duration (largest impact on Pickering B) **Mitigating Action** -Review gap processes, gap outage time estimates, outage scope to minimize outage impact: TCD June 2010.	No new evidence of spacer degradation or wear. 2 (D07 & D12) of the 33 previously SLARed channels in P8 showed movement but was re-SLARed to meet all repositioning requirements. CIGAR PT-CT gap measurement project underway with target of fall 2010 use at Darlington and spring 2011 use at Pickering B. Limited GAP measurement scope will be implemented in fall at Darlington.	Delay in project spacer work program due to supplier resource issue. Literature search on I-X750 results will be late by 2 months (New TCD: Aug 30, 2010). Recovery plans to catch up by end of 2011 are being reviewed by Work Group lead and Steering Committee members.	Too early in project to have an impact on Confidence level, as we need more data, and successful recovery of spacers for testing, to predict future condition of I-X750 spacers. Need gap data to improve PT/CT contact models.	↔ Neutral		
Aggregate Confidence in Fuel Channel Life (project shorter life at Darlington vs. Pickering due to more severe service conditions of temperature, pressure, fluence)					210k (2014) **HIGH** / 225k (2016) **MED** / 240k (2018) **MED**	185k (2016) **HIGH** / 210k (2019) **MED** / 225k (2021) **LOW**
Age of Units (as of end of Q2, 2010)					**164 to 180 kEFPH**	**127 to 137 kEFPH**

MAJOR COMPONENT AGGREGATE RISK as of August 16, 2010 Rev 4

ISSUE & HIGHLIGHTS	INSPECTION RESULTS	ANALYSIS RESULTS	IMPACT ON CONFIDENCE LEVELS	CONFIDENCE LEVEL CHANGE	PICKERING A OPERATIONAL LIFE
Pickering A Calandria Vault Inspection					
Project Objective To characterize impacts of Calandria Vault (CV) condition on unit life. **Operations Risk** Degradation of CV structural components and cooling systems may cause forced outage due to leak in CV piping which can not be repaired with online sealant capability, or permanent unit shutdown if ring thermal shield supports fail. Repeat inspections may be required if significant findings identified. No repair capability currently exists. **Mitigating Action** -Perform planned inspections of Calandria Vaults during P1011. Annual application of on-line sealant to bio shield cooling piping. Maintain dew point specification using CV driers.	Preliminary P1011 results show that there are signs of exterior corrosion of the piping and supporting components, there is no leakage or cracking observed (water trickle). Previous indication suspected to be a crack has been confirmed proven not to be a crack but rather a geometric feature. The ring thermal shield brackets thickness do not require engineering disposition, based on the P1011 ultrasonic testing results.	Results to be analysed following the inspection with assessment to be issued in November 2010. Formal Engineering Decision Meeting to be held in Fall 2010 to determine need for further inspections.	Preliminary results showed no adverse situation as long as current operating procedure is followed (maintaining proper dew point), there is no change in confidence level. Assessment will be revisited after verification of P1011 inspection results.	↑ Improving	 (Confidence level will be adjusted after final Inspection reports are received)
Pickering A Feeders – Detection and Sizing of Blunt Flaws in Weld Region of Fittings					
Project Objective Characterize condition of feeders under welds. **Operations Risk** -Require inspection at the welds to ensure adequate thickness of piping. Planned scope of 25 feeders may not be achieved due to tooling limitations. **Mitigating Action** -Use risk informed decision making approach to support operation to next planned outage as only a partial inspection is planned.	P1011 inspection campaign completed with no blunt flaws detected. Results were found to be surprising favourable	Results to be analysed following the inspection with assessment to be issued 90 days following outage completion. Statistical analysis is required to assess impact of limited inspection on the confidence level over the condition of the full reactor.	Too early to have an impact or confidence as we awaiting statistical analysis of data from the P1011 inspection.	↑ Improving	 (Confidence level will be adjusted after statistical analysis of data is complete)

***190k EFPH is expected Fuel Channel bearing travel life based on measured Fuel Channel elongation rates.**

Aggregate Confidence in Component Life		PICKERING A (Post Re-tube)			PICKERING B			DARLINGTON		
		120k (2014)	134k (2016)	170k (2020)	210k (2014)	225k (2016)	240k (2018)	185k (2016)	210k (2019)	225k (2021)
	Feeders	**HIGH**	**MED**	**MED**	**VERY HIGH**	**VERY HIGH**	**HIGH**	**HIGH**	**HIGH**	**HIGH**
	Steam Generators	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**VERY HIGH**	**VERY HIGH**	**VERY HIGH**
	Reactor Components	**MED**	**MED**	**MED**	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**HIGH**
	Fuel Channels	**HIGH**	**HIGH**	**HIGH**	**HIGH**	**MED**	**MED**	**HIGH**	**MED**	**LOW**
Age of Units (as of end of Q2, 2010)		**58 to 87 kEFPH**			**164 to 180 kEFPH**			**127 to 137 kEFPH**		