



Supplemental Information in Support of Licence Renewal for the MAPLE Reactors

Public Hearing Day 2



October 18, 2005



AECL
Atomic Energy
of Canada Limited

EACL
Énergie atomique
du Canada limitée



Introduction

- **This presentation addresses requests from the Commission at the Public Hearing Day One**
- **Detailed information on the Project work and licensing commitment schedule in support of the application for two-year licence renewal**



Presentation Outline

- Public Information
- DIF Organization
- MAPLE Operations Staffing Levels
- Use of Industry Peers
- Update on DIF Continuous Improvement Plan
- Clarifications on MAPLE 2 PWS Erosion
- Work Schedules – MAPLE 1, MAPLE 2 and MIPF
- Schedule of Licensing Issues
- Positive Power Coefficient of Reactivity
- Document Baseline
- Summary

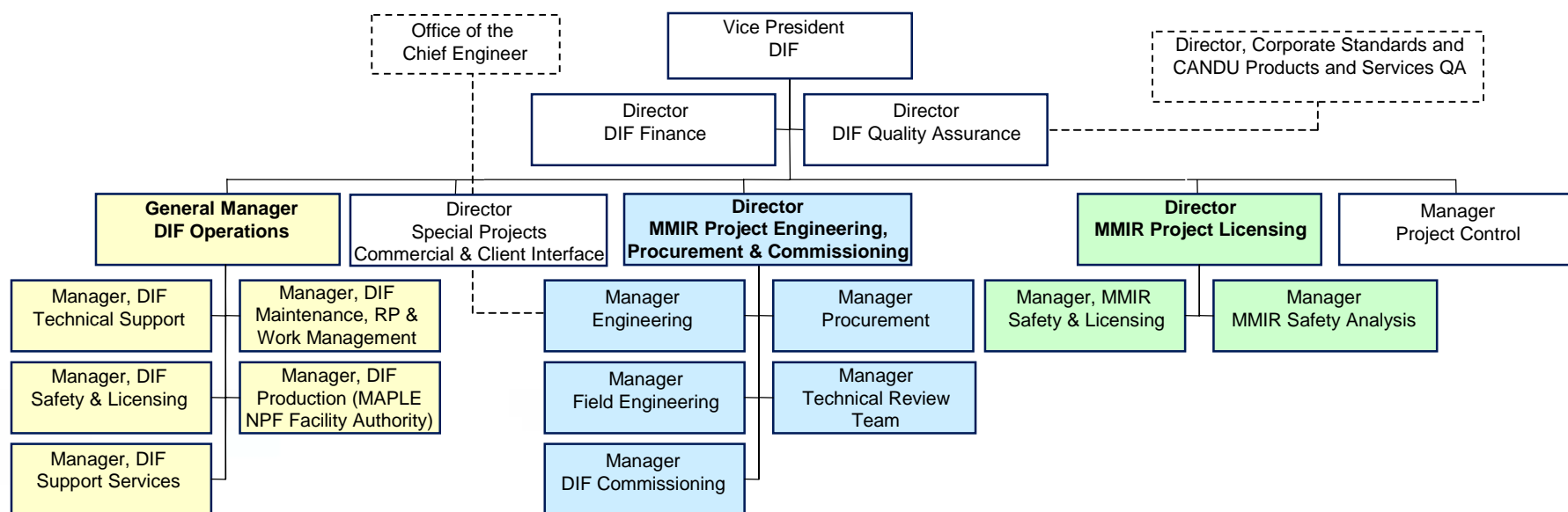


Public Information

- **958 requests have been received between September 2003 and September 2005**
 - **Electronic or hard copy responses have been sent for all requests**
 - **Only one request asked for the status of the MAPLE 1 and MAPLE 2 reactors**
- **Enhanced AECL's website to include more detailed information for MAPLE 1, MAPLE 2 reactors and New Processing Facility**



DIF Organization





MAPLE Operations Staffing Levels

- Staffing levels are sufficient for current operations and commissioning activities
- OLC requirements on minimum staffing levels are met
- Sufficient staff are in training for the production phase
- Operation at 2 kW to maintain operator skills



Use of Industry Peers

- 16 people currently involved; 4 others completed their assignments
- The primary role is mentoring staff
 - The secondary role is assisting in the work
- Deployment:

Maintenance &
Planning

Operations

Technical
Support

Training and
Coaching

Physics

Safety and
Licensing

Human
Performance

Root Cause
Analysis

Quality
Assurance



Update on DIF Continuous Improvement Plan

- **Two reviews:**
 - **Industry peer review of NRU Operations by a team of experienced staff representing the four Canadian nuclear utilities – areas for improvement reviewed by DIF Operations**
 - **Internal assessment of DIF Operations which included industry peer participation**
- **Common elements with NRU Improvement Plan**
- **The DIF Continuous Improvement Plan has been submitted to the CNSC staff for review**



Update on DIF Continuous Improvement Plan (cont'd)

- **Leadership**
 - Goals and indicators implemented for safety and regulatory, business processes, and learning and growth
- **Human Performance**
 - Adopted industry “event-free tools”
- **Processes**
 - Improving corrective action program
- **Equipment Performance Programs**
 - Implementing a ‘System Health Monitoring’ program

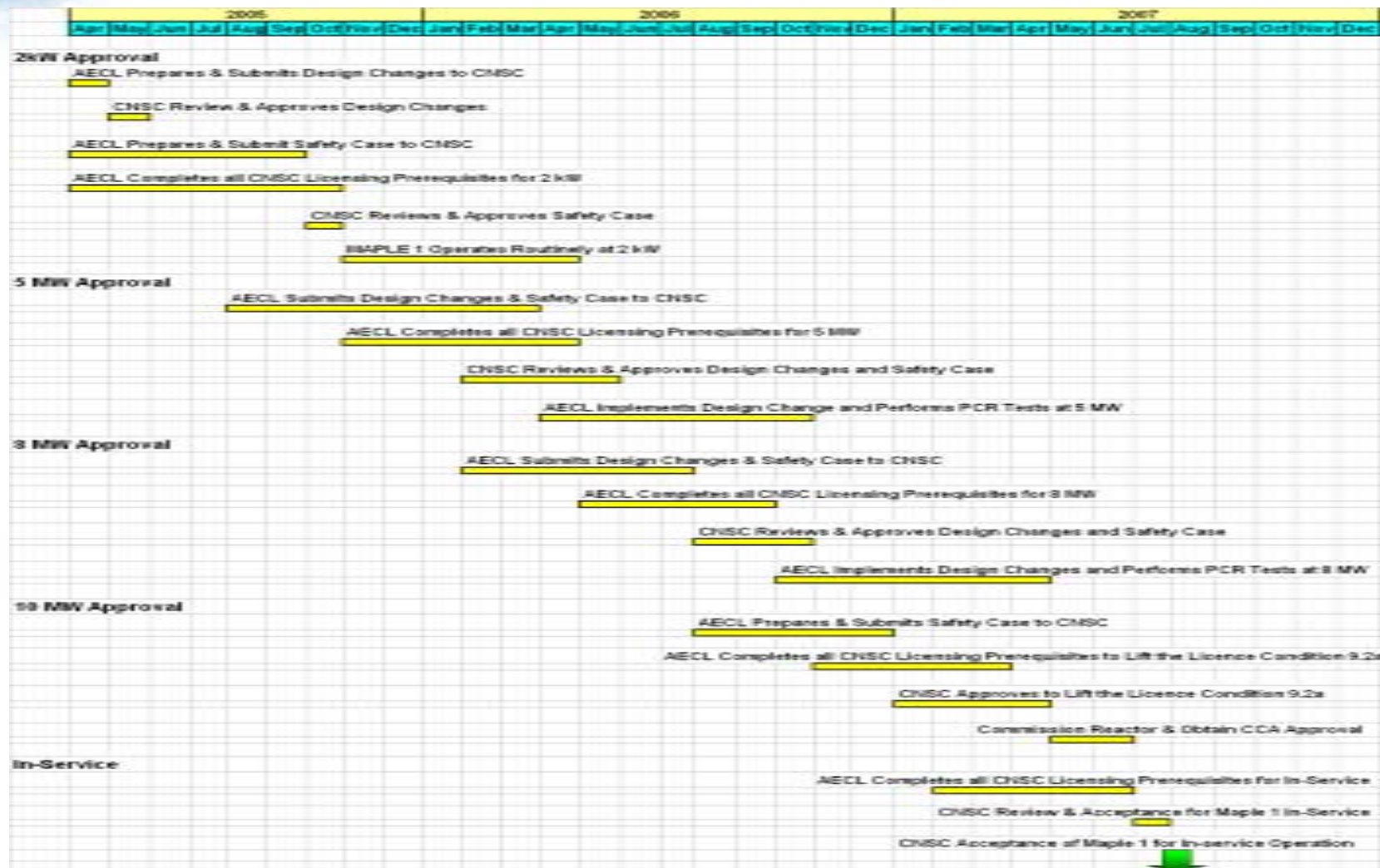


Clarifications on MAPLE 2 PWS Erosion

- **Erosion is less severe in the MAPLE 1 PWS than in MAPLE 2 PWS because of the valve position and the higher back pressure**
- **Corrective Action is to replace the valve with an anti-cavitation design**



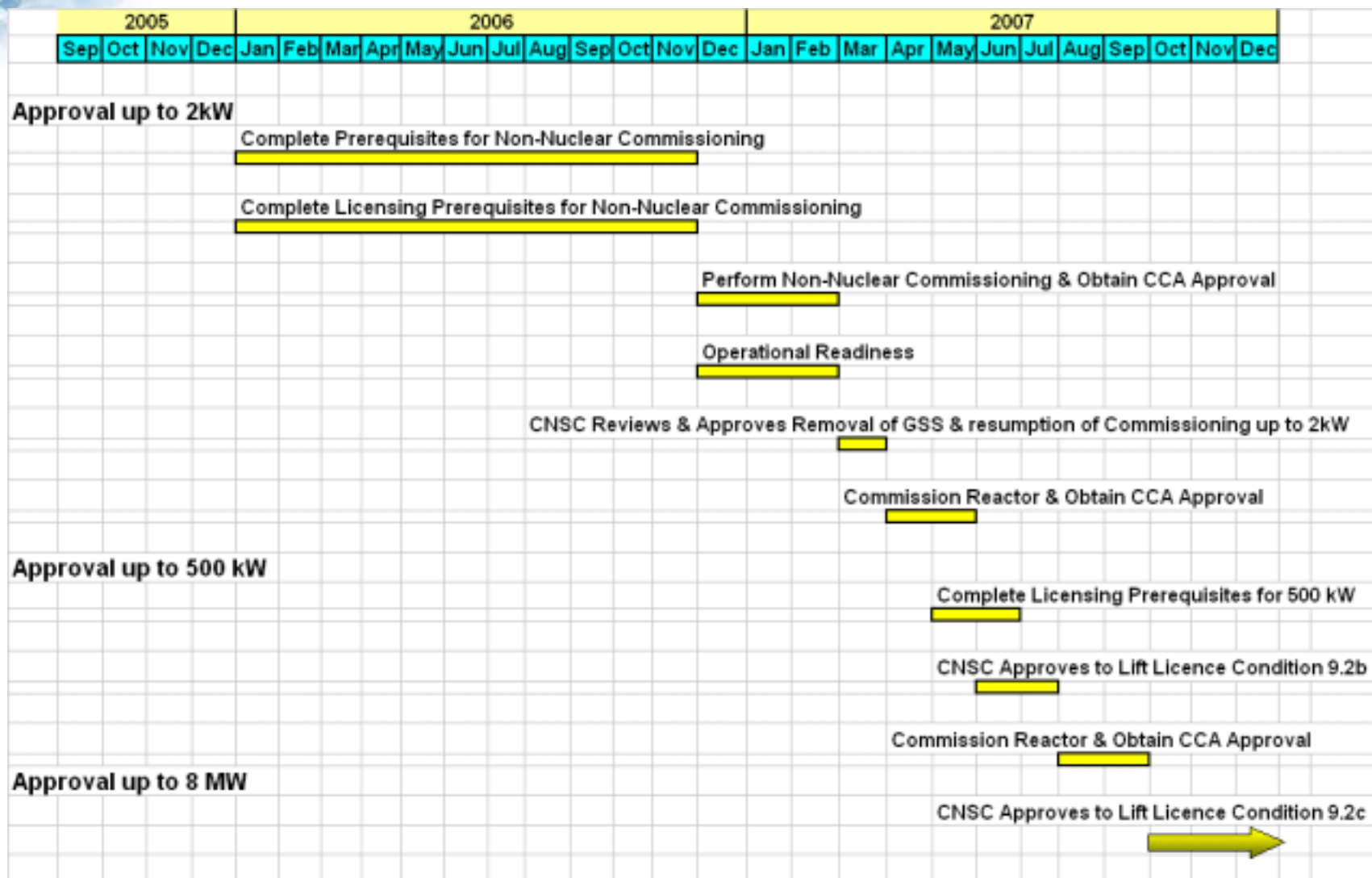
MAPLE 1 Work Schedule



The "work schedule" contains significant uncertainties associated with the positive Power Coefficient of Reactivity (PCR) and the work to be performed beyond 5 MW

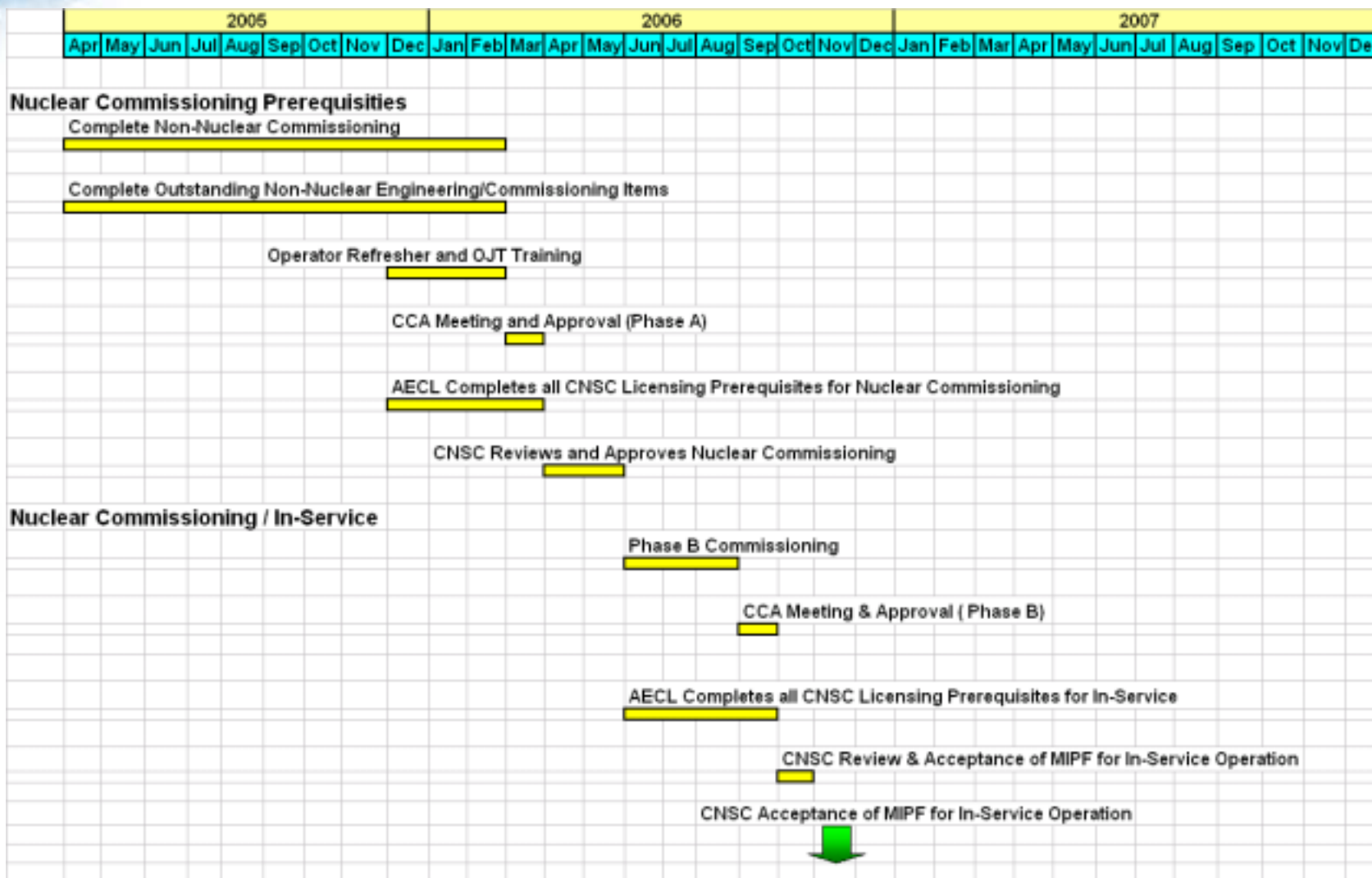


MAPLE 2 Work Schedule





MIPF Work Schedule





Schedule of Licensing Issues

Licensing Issue	MAPLE 1 Target Date	MAPLE 2 Target Date	MAPLE 1 IPF Target Date
Agreement to Resume Operation	Nov. 2005	Mar. 2007	-
Commissioning Demonstration of Design Intent	Apr. 2006	Nov. 2007	Feb. 2006
Update to FSAR (partial)	Apr. 2006	Apr. 2006	-
Cluster Holder	Apr. 2006	Nov. 2006	-
Mitigate Positive PCR	Apr. 2007	May 2007	-
Computer Code Validation	Aug. 2007	Nov. 2007	-



Positive Power Coefficient of Reactivity

- Brookhaven National Laboratory independent review completed and a key observation is:
 - “AECL analysis is in general thorough and of high quality”
- Idaho National Laboratory predictions of the PCR using independent models and code calculations completed
 - These simulations produced the same results as AECL
- The next step is PCR testing at ~ 5 MW



Document Baseline

- **DIF Operations document baseline has been issued**
 - **All documentation required for safe operation of the MAPLE 1 reactor is in the control room**



Summary

- **Addressed information requests from the Commission at the Public Hearing Day One**
- **Provided updates on status of licensing issues**
- **Committed to safe operation as required by each licensing holdpoint**
- **Applying for a two-year licence**





List of Acronyms

CCA	Commissioning Completion Assurance
DIF	Dedicated Isotope Facilities
GSS	Guaranteed Shutdown State
MIPF	MAPLE 1 Iodine-125 Production Facility
MMIR	MDS Nordion Medical Isotopes Reactor
NPF	New Processing Facility
OJT	On-the-Job Training
OLC	Operating Limits and Conditions
PCR	Power Coefficient of Reactivity
PWS	Process Water System
QA	Quality Assurance
RP	Radiation Protection