



9. *Summary*

- ♦ **Fuel management in CANDU has both design and operations aspects.**
- ♦ **The design component consists of establishing:**
 - ♣ the desired time-average power distribution for the equilibrium core, which will be used as the target power shape by the site fuelling engineer, and
 - ♣ the configuration of depleted fuel in the initial core.
- ♦ **The time-average calculation is the source of important other information, such as:**
 - ♣ expected discharge burnup by channel,
 - ♣ expected intervals between channel refuellings,
 - ♣ core reactivity-decay rate,
 - ♣ etc.



9. Summary

- ♦ **The design of the time-average distribution is facilitated**
- ♦ **by the flexibility in selecting region-specific (or, in the limit, channel-specific) target exit-irradiation values**
- ♦ **and axial refuelling schemes,**
- ♦ **allowed by the CANDU on-power-refuelling feature.**



9. *Summary*

- ♦ **The operations component is the responsibility of the site fuelling engineer or reactor physicist. It involves:**
 - ♣ **core-follow calculations, typically performed 2 or 3 times per week to keep close track of the in-core flux, power, and burnup distributions and of the discharge burnup of individual bundles,**
 - ♣ **the selection of channels for refuelling, based on the current core state, power and burnup distributions and zone-control-compartment water fills, and**
 - ♣ **the determination of the CPPF (channel-power-peaking factor) value, used in the calibration of the ROP detectors.**



9. *Summary*

- ♦ **The job of the site fuelling engineer or reactor physicist never gets boring.**
- ♦ **The daily tasks and responsibilities are meaningful and keep the job interesting and stimulating.**