Commission Briefing on NEW REACTORS

April 6, 2005

ACRONYMS

ACR	advanced CANDU reactor
AECL	Atomic Energy of Canada Limited
AP	advanced passive
COL	combined license
DAC	design acceptance criteria
DC	design certification
EPR	Framatome's trademark name for their 1600 MW PWR
ESBWR	economic and simplified boiling water reactor
ESP	early site permit
FTE	full time equivalent
FY	fiscal year
GE	General Electric Company
GEN	generation

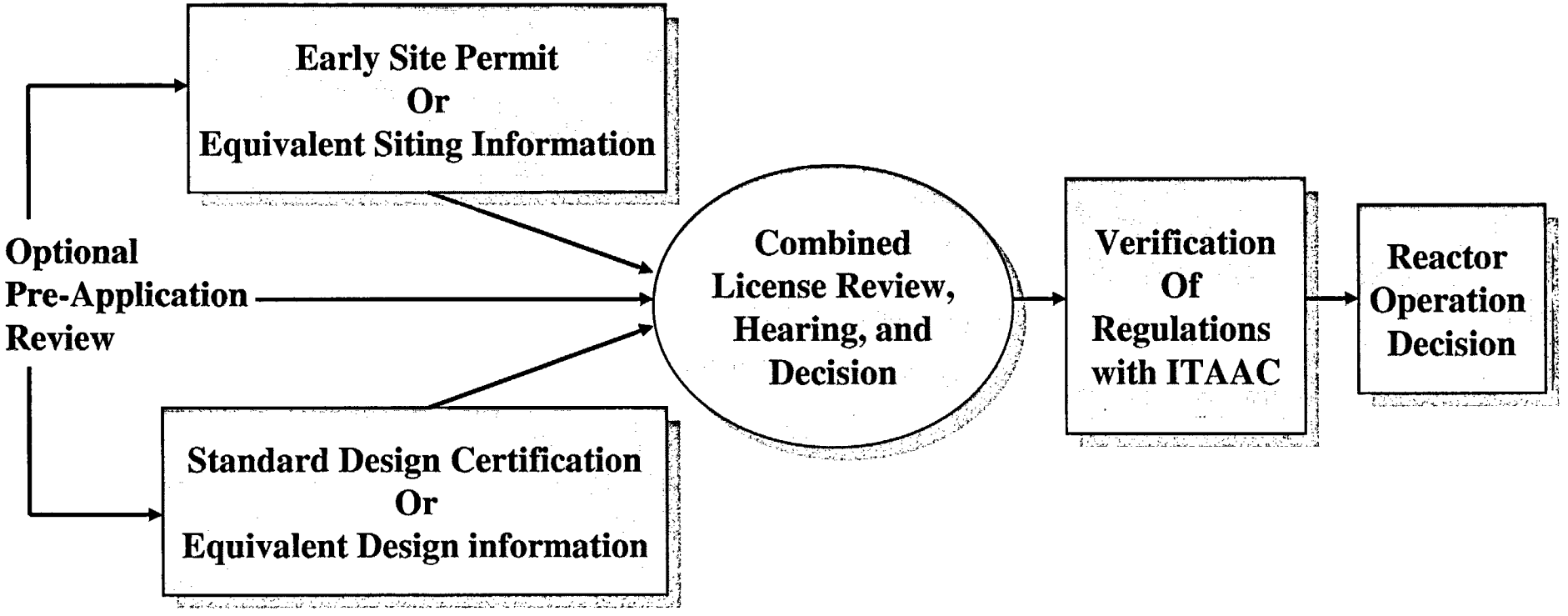
ACRONYMS (cont.)

IRIS	international reactor innovative and secure
ITAAC	inspections, tests, analyses, and acceptance criteria
LWR	light water reactor
M	million
MW	megawatt
NEI	Nuclear Energy Institute
PBMR	pebble bed modular reactor
PRA	probabilistic risk assessment
PWR	pressurized water reactor
RES	Office of Nuclear Regulatory Research
RS	review standard
SER	safety evaluation report
W	Westinghouse Electric Corporation

Agenda

- Accomplishments and Status
- Challenges
- Strategies

Part 52 Licensing Process



Design Certification Program Status

- Standard Review Plan available
- 42-60 month review schedule (60-120 FTE/$10-25 M)
- Three certified designs
- W AP1000 scheduled rulemaking (12/05)
- GE ESBWR submittal in FY 2005
- 5 designs in pre-application review

Early Site Permit (ESP) Status

- ESP guidance document (RS-002) issued
- 3 ESP reviews in progress
  - North Anna, Clinton, and Grand Gulf
- Southern Company application in FY 2006
- 36 month review/hearing schedule
  (16 FTE/$2 M each)

Combined License (COL) Preparations

- Review of NEI COL Application Guidance (NEI-04-01) in progress
- Review of COL Operational Programs
- Construction Inspection Program
- 10 CFR Part 52 revision
- COL referencing an ESP and Design Certification – Nominal 27 month review schedule (60 FTE/$3.5 M)
- Hearing preparations

RES ROLE IN NEW LWR LICENSING

- Supports pre-application, and design certification application, and COL application (as necessary) reviews of LWRs (e.g., AP-1000, ESBWR, EPR)

- Tools, data, and expertise currently in place to support review of designs similar to current LWR designs

RES ROLE IN NEW NON-LWR PLANT LICENSING

- Leads potential pre-application reviews of new non-LWRs, if requested (e.g., PBMR)

- Leads the development of NRC's longer range, technical needs for reviewing and licensing new plant designs, technologies and licensing framework

RES SUPPORT FOR FUTURE DESIGN REVIEWS

- Designs significantly different from current advanced LWRs will require greater technical development
  - ACR-700 pre-application
  - PBMR pre-application
  - Toshiba 4S pre-application (Potential)
  - GEN IV pre-application, COL (Potential)

RES GENERIC TECHNICAL DEVELOPMENT

- New Reactor Licensing Framework
- PRA
- Human Performance
- Seismic and structural issues
- Digital Instrumentation and Control
- Cooperative activities

NRC Challenges

- Significant preparation required for application review
- Large number of potential applications
- Schedule for application submittals is uncertain
- **Resources to support operating reactor safety and security is highest priority**

New Reactor Licensing Schedule

FY 2006 FY 2007 FY 2008

Finish 3 ESPs
Start Southern ESP ——————————→

Continue ESBWR DC ——————————→

Start EPR DC

Start Dominion COL ——————→

Start Duke COL
Start NuStart 1 COL
Start NuStart 2 COL

Pre-application Reviews ——————→

Strategies for New Reactor Licensing Challenges

- Expand NRC staff capabilities
- Expand NRC contractor utilization
- Disciplined Licensing Approach

Expand NRC Staff Capabilities

- Agency wide effort to achieve maximum credible growth and knowledge transfer
  - Recruiting
  - Training
  - Facilities
  - Information Technology
  - Organization

Expand NRC Contractor Utilization

- Agency wide effort
- Explore growth with existing qualified contractors and labs
- Solicit new contractors for qualification

Disciplined Licensing Approach

- Develop expectations for quality and content of applications
- Work with applicants to firm up schedules
- Priority given consistent with National Energy Goals

Conclusions

- NRC processes are ready
- NRC resources are limited
- Industry demand is uncertain
- NRC staff has a strategy