

WNA Licensing & Permitting Survey

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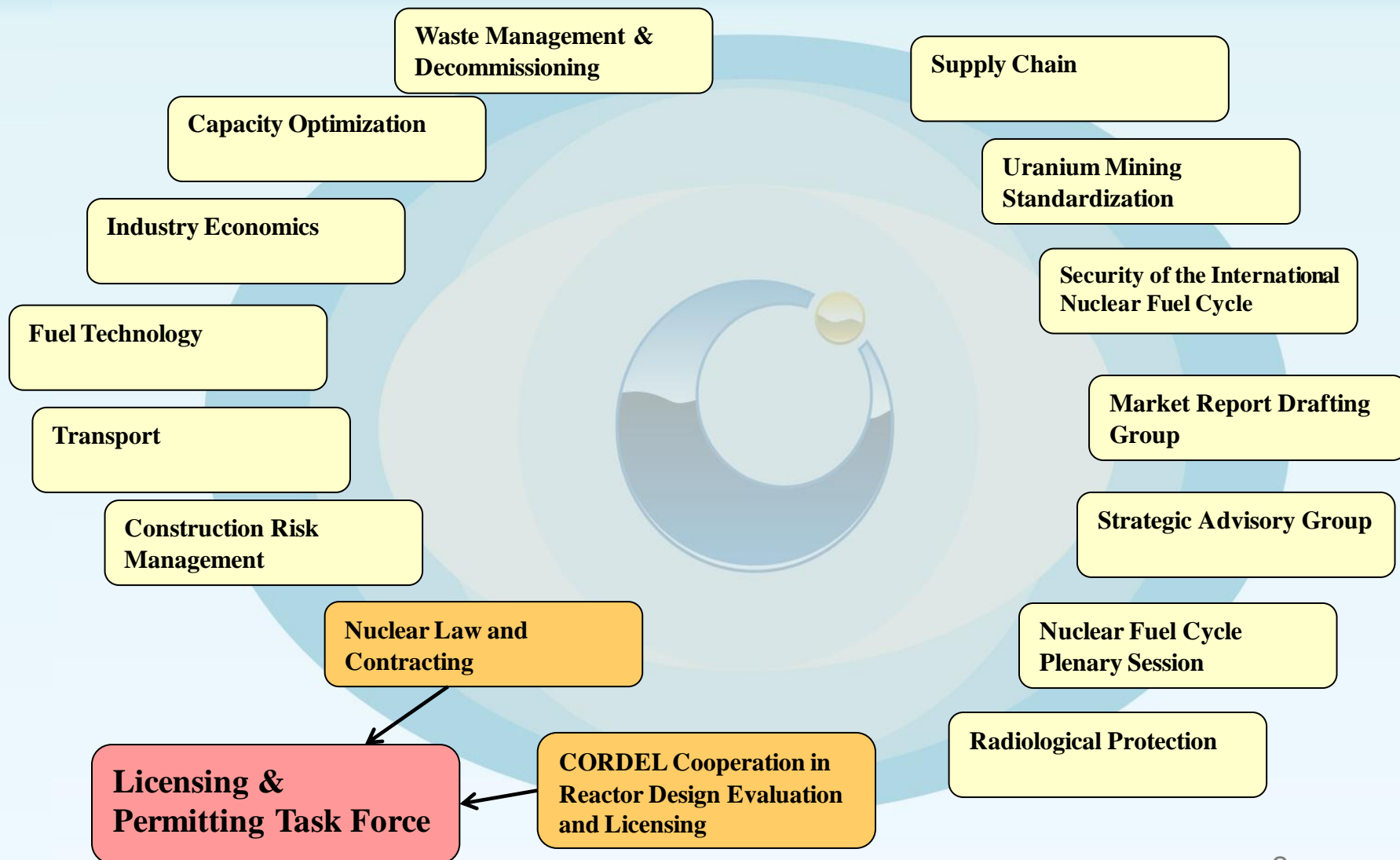
WNA CORDEL Director of Licensing

2nd CNRA International Workshop on

New Reactor Siting, Licensing and Construction Experience

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WNA Working Groups



Survey on Licensing



- Survey with 50 questions prepared in the course of 2011
- Release of the Survey to WNA members in early December 2011
- 15 sets of answers received by end of January 2012
 - utilities, vendors and an architect engineer
 - from 4 continents
- Survey Report finalised in September 2012
- Publication on WNA website forthcoming (www.world-nuclear.org)

Scope of the Survey and the Report



- No duplication of work already being done by institutions such as IAEA, OECD/NEA and EU
 - IAEA Milestones document (NG-G-3.1) and others
 - OECD/NEA WGRNR work (ongoing)
 - ENEC Licensing Survey and ERDA group
- All nuclear stakeholders agree that safety and security is paramount in any licensing process

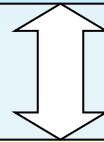
The Survey focuses on the interaction of regulatory processes with the industry's commercial activities, such as procurement, contracting, and finance

- Report is an objective summary and analysis of survey responses

Licensing and project development



Licensing



- **Manufacturing and construction, incl. preparatory phases**
- **Securing financing and investment**
- **Design work – from basic design to detailed design/specs**
- **Vendor selection**
- **Procurement, contracting, risk allocation**
- **Site selection, on-site activities**
- **Communication with stakeholders, public involvement**
- **Permitting, i.e. non-nuclear authorisations/licences/permits**
- **International standardisation**

No one-fits-all licensing model...



Different types of new build countries

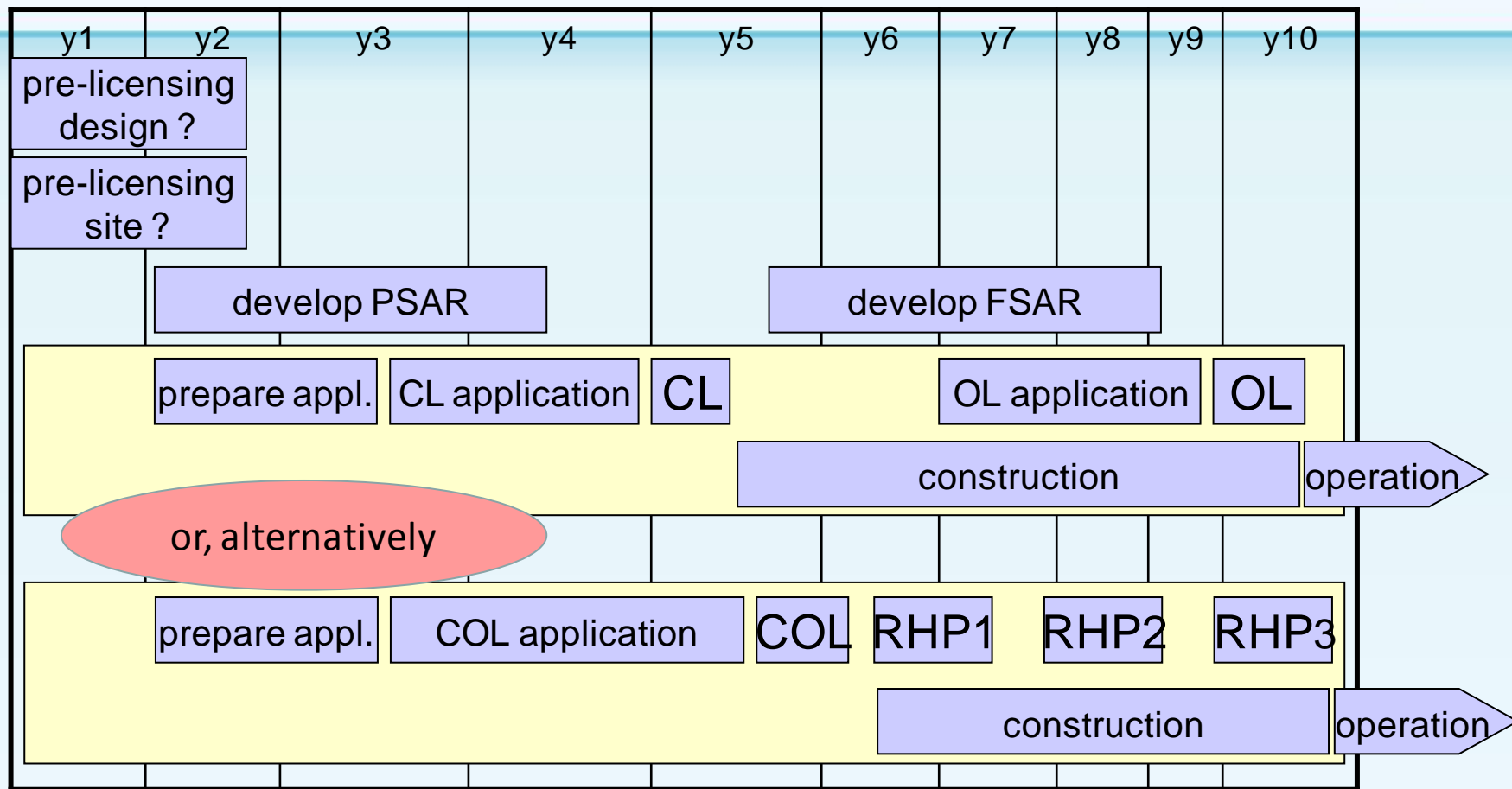
- large, mature, market driven: US, UK, Canada...
- large (mature or emerging) state-driven: China, Russia, Korea, India...
- small-mature: Czech Republic, Slovak Republic...
- emergent: UAE, Turkey, Poland, Indonesia, Vietnam....
- SMR

very diverse regulatory, political and economic environments

FOAK, NOAK and FIAC

- FOAK: high risk and uncertainty
- NOAK (nth of a kind): benefit of standardization
- FIAC (first-in-a-country): more like FOAK or more like NOAK?

Licensing: some basic notions



CL: construction licence

OL: operating licence

COL: combined construction and operating licence

RHP: regulatory hold point (consent, permit, ITAAC....)

PSAR: preliminary safety analysis report

FSAR: final safety analysis report

Licensing system



- One-step licensing vs. two- or multi-step licensing: commercial developers value predictability and certainty in any system rather than having a preference for a particular system
 - One-step gives more certainty because no further licence is needed...
 - ... but two-step may be quicker (CL can be obtained earlier) and better for FOAK
- Pre-licensing of a design or a site is important feature of a regulatory system, reducing the risk of licensing and making the outcome of a licensing process more predictable

Vendor and site selection



- Many different ways of dealing with this:
 - Can be key commercial decisions that form the basis for entering the licensing process
 - Can be based on initial governmental decision reached in advance of a commercial project (e.g. choice of the national “champion” as vendor)
- Concerning technology selection, need to make a choice as early in the process as possible, ideally before the licence application

Contracting

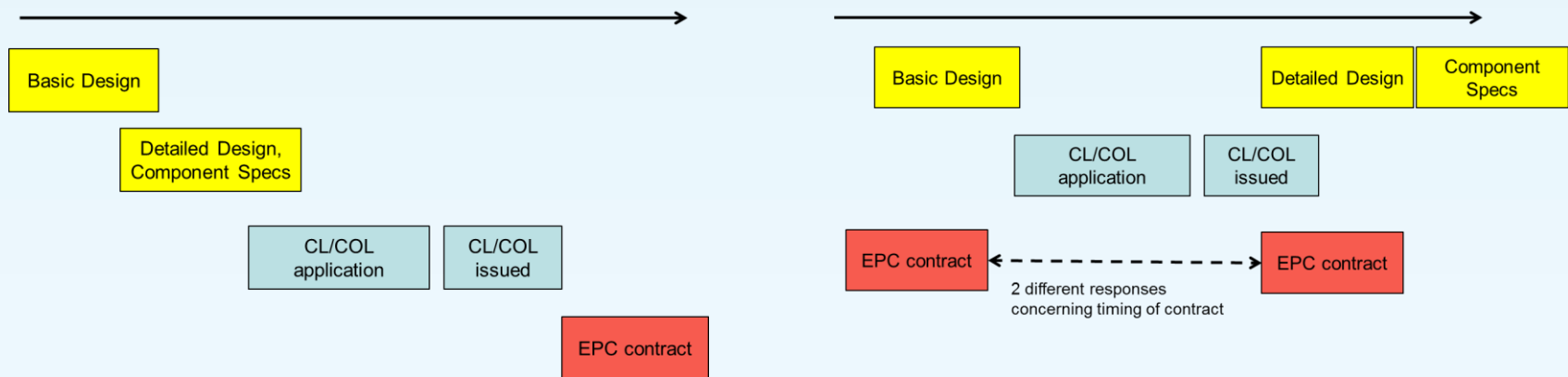


- Development towards replacing a single contract with a system of contractual steps
- Stepwise entering into commitments, based on risk which gradually is reduced depending on progress of licensing procedure
- Main contract concluded rather late, preceded by pre-contract
- In less market-driven environments, the “classic” approach of an early upfront EPC contract is still in use
- Not practical to develop or advocate for a standardized contract, due to the diversity of factors driving commercial considerations in specific projects

Design Development (1)



- Main steps: basic design - detailed design - procurement specifications
- Full range applies only to a FOAK project – or, to some extent, to a FIAC project
- Timing of the design development steps: Survey shows a range of solutions. Two examples:



Design Development (2)



- Crucial issue for FOAK projects: to what extent does the design need to be developed at the time the construction licence or COL is issued?
 - Consensus that a certain design maturity is beneficial or even necessary for licensing...
 - ...but the percentages of design completion actually suggested are very different (from 10-15% to 100%)
 - Depends both on definitions (e.g. basic design) and on regulatory and commercial environment
- Careful contractual arrangements needed, defining design completion, time schedule and licensing significance for different phases as well as the procurement time schedule
- Process should be reviewed by the regulator – some commitment by the regulator needed



- Timing of the Financial Investment Decision (FID): before licence application or after licence has been issued?
 - Link to contracting (full-scope commitment supposes FID)
 - Both views given by respondents, depending on their national regulations and the commercial and market environment
- A clear and predictable licensing regime increases availability of financing

Involvement of Stakeholders



- Government: formally binding positive decision about the NPP project at the outset relieves licensing process of political considerations and allows it to focus on safety issues
- Public: balance meaningful public involvement with the necessity to take basic decisions early in the project and not to open them up for discussion again at a later stage
- Law courts: all stakeholders in the licensing process must take care that sound and well documented decisions are taken so they will successfully withstand scrutiny by the law courts

Procurement, supply chain, oversight



- Procurement is a stepwise process with integrated decision-making based on pre-defined requirements and factors
- Design documentation and manufacturing documentation needs to be efficiently and effectively reviewed between all parties involved
- In manufacturing, relevant qualifications, reviews and approvals should be fully completed prior to manufacturing. In some cases, more “flexible” solutions should be feasible
- Enhanced international standardisation and greater cooperation of regulators may be a means to make component manufacturing more predictable

Support for international standardization



- International harmonisation of safety requirements and standardisation of reactor designs would greatly facilitate licensing.
- Particularly in the case of an FIAC, a standardised design and an acceptance of licensing results already obtained in another country would be much easier than starting from scratch and re-doing the entire assessment.
- However, there is still a long way to go
- The Survey also investigates in which areas reactor design standardisation would have a substantial impact
 - Rather not for: site qualification and selection stage
 - Definitely for: reactor design licensing, vendor selection and procurement

Way Forward



- Report to be published soon
- Discussion and interaction with stakeholders, particularly with regulators
- Depending on the outcome, the Task Force will refine its analysis and produce further reports on specific topics