Setting the Scene – the WNA Licensing and Permitting Report

Christian Raetzke, Advisor to WNA CORDEL
WNA Workshop Licensing: Challenges and Solutions

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WNA Members

- Uranium Mining, Conversion, Enrichment & Fuel Fabrication
- Reactor Vendors
- Operators
- Nuclear Engineering, Construction & Waste Management
- Transport, Legal, Financial, Insurance & Brokerage

170 Members
Survey and Report on Licensing

- WNA Report 'Licensing and Project Development of New Nuclear Plants' published in January 2013
- Based on survey among WNA members
  - utilities, vendors and an architect engineer
  - from 4 continents
- All industry 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 financing
Licensing and project development

- **y1** pre-licensing design?
- **y2** pre-licensing site?
- **y3** develop PSAR
- **y4** Application, Construction licence
- **y5** develop FSAR
- **y6** Operating licence
- **y7** construction
- **y8** operation
- **y9** oversight
- **y10**

**Contracting:** Early EPC or graded series of contracts?

**Design development**

**FID Financial Investment Decision**

**Managing the supply chain**
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....

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Different licensing processes

- One-step (COL), two-step, multi-step
- Number of regulatory holdpoints

FOAK, NOAK and FIAC

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

FOAK or $n^{th}$ of a kind?
Session 1: Support for international standardization

- International **harmonisation** of safety requirements and **standardisation** of reactor designs would facilitate licensing.
- Particularly in the case of a First-in-a-country (FIAC), a standardised design and an acceptance of licensing results already obtained in another country would be much easier than re-doing the entire assessment.
- The Survey Report 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
- Vision: Can MDEP be developed into a treaty-based system of **joint reactor design certification** and/or mutual acceptance of design certifications?
Session 2/1: 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.
- **Pre-licensing** of a design or a site reduces risk of licensing and making the outcome of a licensing process more predictable.
- **Formally binding decision** about the NPP project at the outset relieves licensing process of political considerations.
- Meaningful **public involvement** to be balanced with the necessity to take basic decisions early in the project and to stick to them.
Development towards replacing a single contract with a system of contractual steps:
- Pre-contracts for licensing
- Main contract for construction after licence has been obtained
- Separation of licensing and construction phase
- Link to Financial Investment Decision (FID): late FID means late main contract
- In less market-driven environments, the “classic” approach of an early upfront EPC contract is still in use
Session 3: Design Development

• Main steps: **basic design - detailed design - procurement specifications**
• Depends on **FOAK, NOAK or FIAC**
• **Timing** of the design development steps varies

- Basic design
- Detailed design
- Construction licence
- Main contract (EPC)
- Design certification
- Component specs?
- Main contract (EPC)

• A certain **design maturity** is necessary for licensing...
• ...but the percentages of design completion actually suggested are very different (from 10-15% to 100%)
Session 4: Procurement, supply chain, oversight

- There seem to be different types of regulatory oversight, e.g. concerning level of regulator’s involvement to procurement, quality assurance and oversight
- Design documentation and manufacturing documentation needs to be efficiently and effectively reviewed between all parties involved
- In manufacturing, relevant qualifications, reviews and approvals should normally be fully completed prior to manufacturing. In some cases, more “flexible” solutions should be envisaged
- Enhanced international standardisation and greater cooperation of regulators may be a means to make component manufacturing more predictable
A personal summary

• Each country needs to achieve predictability and control of regulatory/licensing risk in its own system
• Report calls for international harmonisation and standardisation not indiscriminately, but only where it adds value; then, however, it establishes a very strong case
• Different political and economic settings (e.g. market-driven vs. state-driven) call for partly different solutions
• Regulators need to be aware of commercial decisions and their interaction with the licensing and oversight milestones
• Regulatory and commercial processes and their interaction seem to become ever more complicated
• More international cooperation and acceptance in design licensing would address many issues