[22nd IAEA INPRO Dialogue Forum]

Session 3 - Demonstration of economic competitiveness of SMRs with robust supply chain

Challenges and opportunities in building a resilient supply chain for SMRs

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Comparison of SMR and Large Nuclear Power Plant

The Reactor Module of SMR is not small compared to the Reactor Cooling System of large Nuclear Power Plants. However, the size of SMR plants and risk of accidents are smaller.

To manufacture complicated and large SMR reactor modules, it is necessary to introduce specialized manufacturing equipment and develop special manufacturing processes.
Manufacturability Review and Design Optimization

SMR developing companies should cooperate with Manufacturing Companies from the early design stage to reduce manufacturing cost and duration.

Most of SMR Developing Companies

• Start-up companies
• SMRs are the First-Of-A-Kind designs
• Have no manufacturing experience
• Fabless companies

• Check whether the design is manufacturable.
• Suggest Design Optimization idea without negative impact on performance and integrity of design.

Reliable Manufacturing Companies

• Develop manufacturing process and technology to meet design requirement
• Introduce specialized manufacturing equipment

• Request engagement of Manufacturing Companies from the early stage of design.
• Establish strategic partnership.
Success Factors for SMR Manufacturer

To be a reliable SMR manufacturer, seamless efforts are required, going beyond the role of a mere "build-to-print" manufacturer.

**Comprehensive Understanding of SMR design**
- Extensive experience in nuclear component design and manufacturing
- In-depth understanding in nuclear regulation and Code/Standard

**Differentiated Manufacturing Expertise**
- Development of innovative manufacturing technologies
- Proactive investment in facilities
- Co-work with manufacturing equipment supplier

**Robust Supply Chain**
- Collaboration with government and financial investors
- Establishing win-win strategies with subcontractors