

International Projects Implementation Standardized Approach to Licensing in The Nuclear Fuel Cycle Area

Josef Běláč, managing director

josef.belac@alvel.eu

www.alvel.eu



Presentation Outline



Introduction

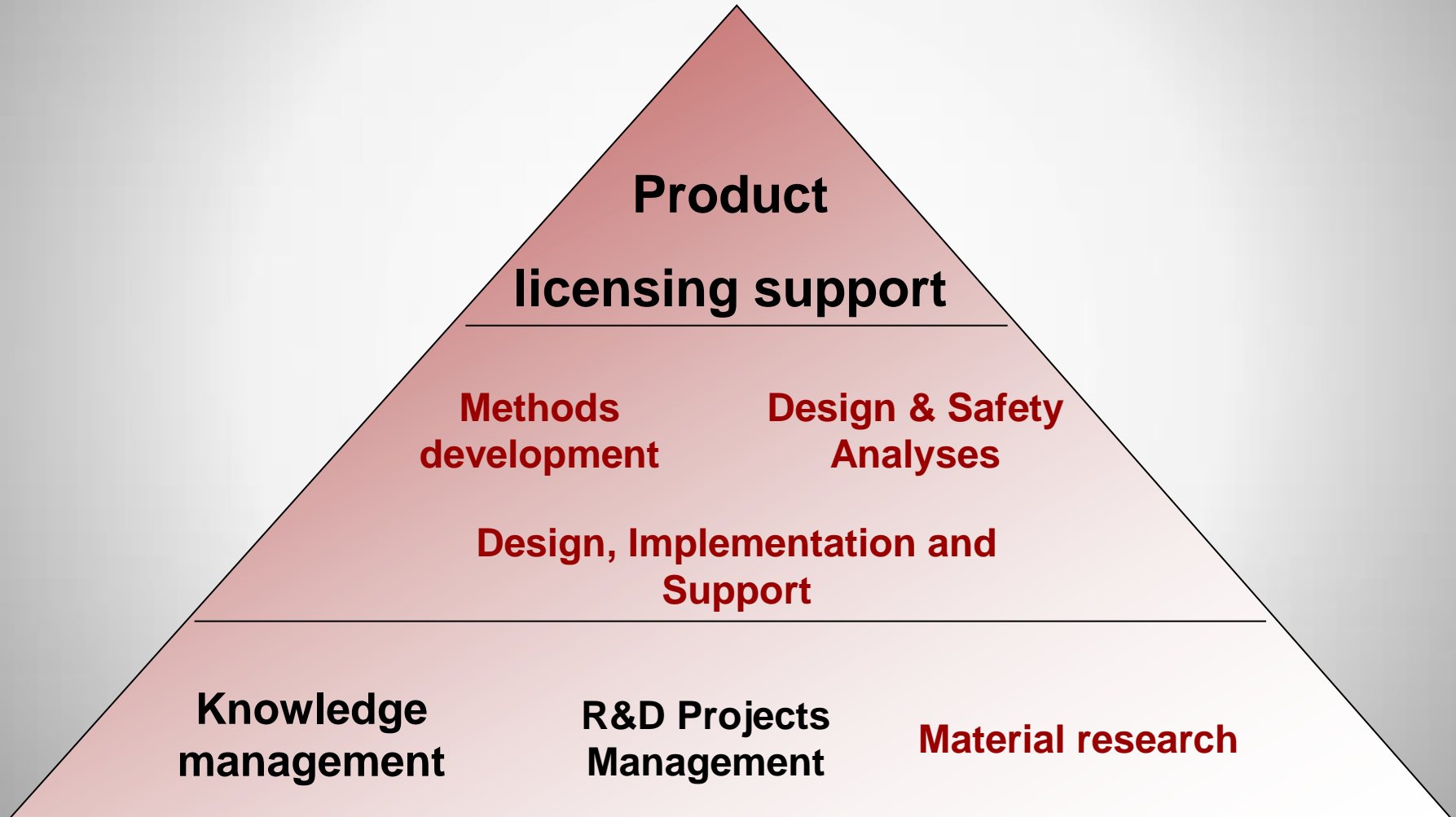
General Licensing Framework for International Nuclear Projects

NPP Construction vs. Fuel Cycle Projects

Key Aspects to Succeed

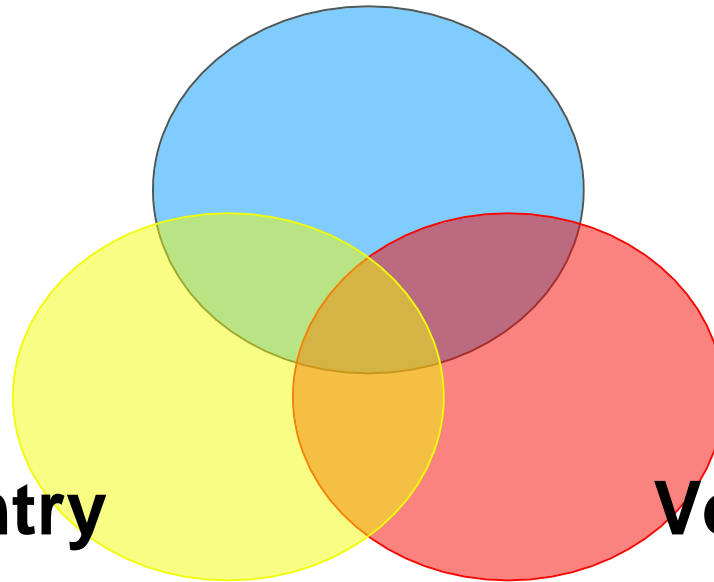


Introduction



General Licensing Framework for International Nuclear Projects

IAEA Standards



Customer Country Standards

Vendor Country Standards

General/Generic Design Approval

EUR – Certification

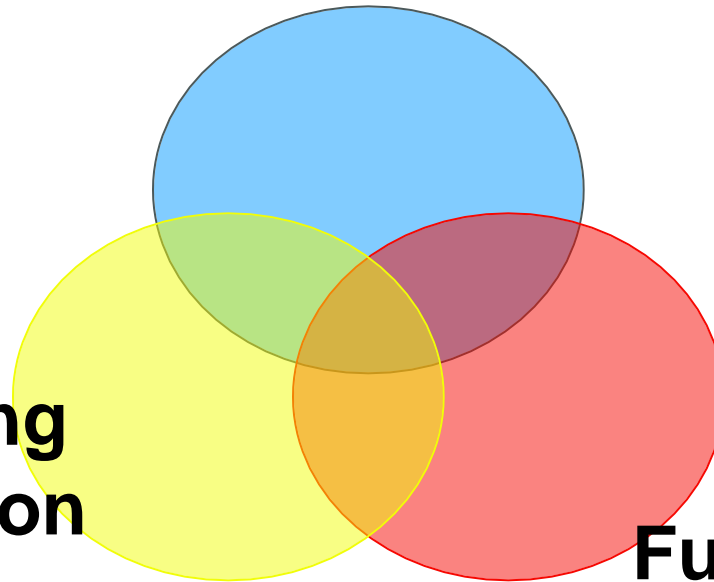
WENRA Guidelines

Country Specific Regulation

NPP Construction vs. Fuel Cycle Projects

Plant Construction - 6

**Plant Upgrading
During Operation
6x10**



Fuel supplies - 60

Plant Vendor x Fuel Vendor

Design and Licensing Bases

Key Aspects to Succeed

- Continuous product and methods development**

 - More Effective Fuel**

 - Accident Tolerant Fuel**

- Plant operation support – localization**

- Licensing support**

 - Design Bases**

 - Safety analyses**

- Process standardisation**

=> Competitiveness and Sustainability

Product licensing support:

TVEL products on European market in VVER/PWR fuel segment;

- VVER 440 (Gd2, Gd2M, Gd2M+, Gd3);**
- VVER 1000/1200 fuel (TVSA-T, TVSA, TVS-2M);**
- PWR – (TVS KVADRAT);**
- Fuel related services.**

Current R&D Projects

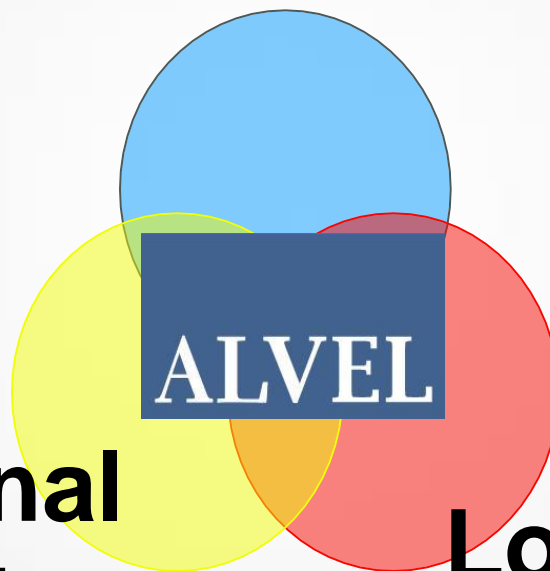
- **3D fuel behavior modeling for alternative fuel cladding alloy materials;**
- **Experimental research on irradiation induced growth of current and prospective fuel cladding and assembly structural materials from Zr alloys;**
- **High temperature oxidation and hydriding of zirconium alloy materials;**

Partners:

- **VNIINM – Bochvar Institute, TVEL**
- **UJV Rez, Skoda JS, UJP Praha, Chemcomex;**

Thank You for Your Attention

Nuclear Fuel Cycle



**International
Cooperation**

Localization

ALVEL, a.s., Štefánikova 41, 602 00 BRNO, Czech Republic

www.alvel.eu, E-mail: office@alvel.eu, Phone: +420 541 550 650