

Digital Technologies for Decommissioning --A PLM Perspective

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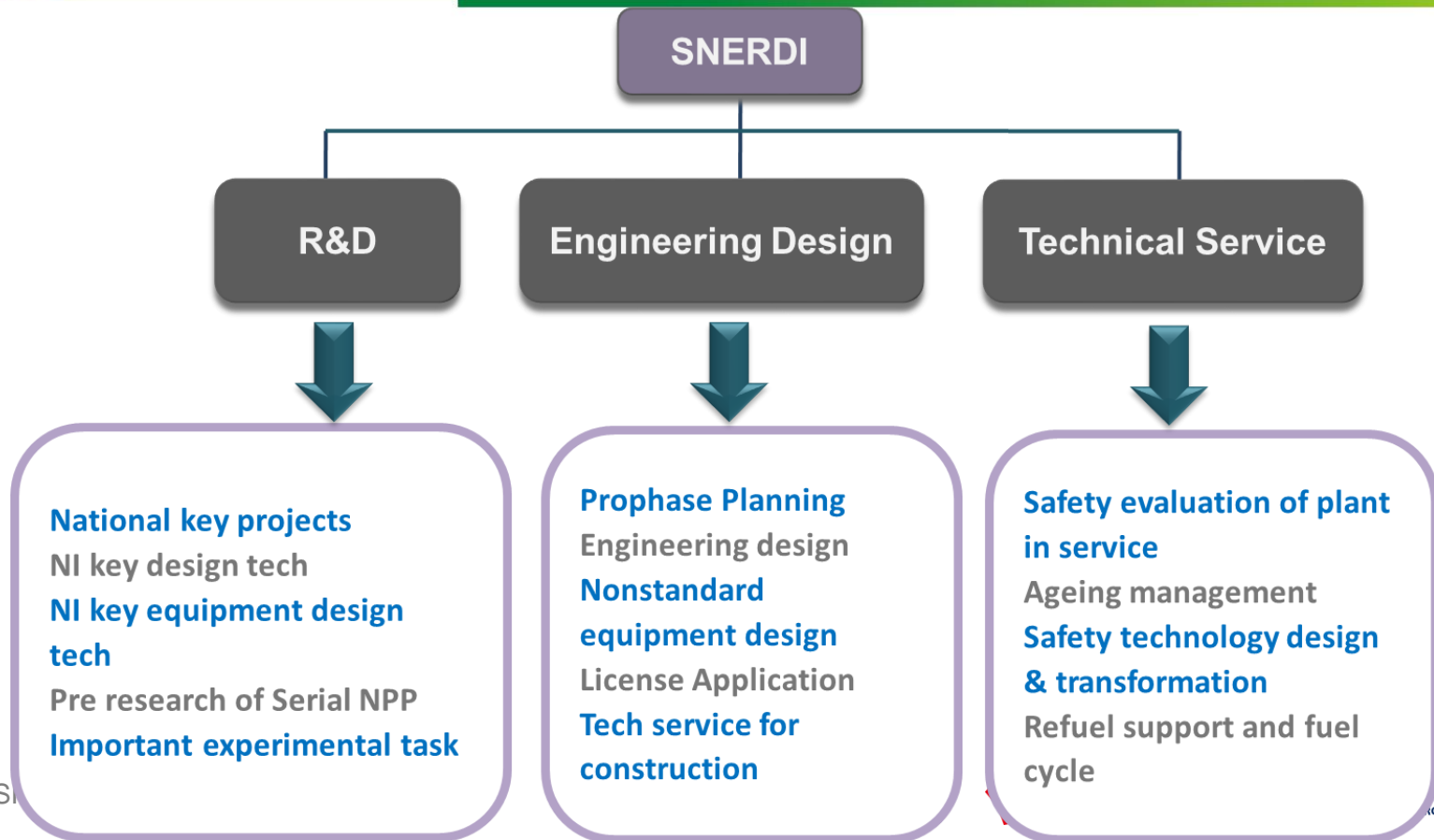
1. Brief intro of SNERDI



Shanghai Nuclear
Engineering Research
& Design Institute
(**SNERDI**) located in
Xuhui district,
Shanghai, established
in Feb. 8, **1970**



1. Brief intro of SNERDI



1. Brief intro of SNERDI

The 1st NPP in mainland of China, Design of QS-I 300MWe NPP with 2 loops PWR. 1st power to grid on Dec. 15, 1991



Design of Pakistan Chashma NPP Unit 1, 2, 3 and Unit 4



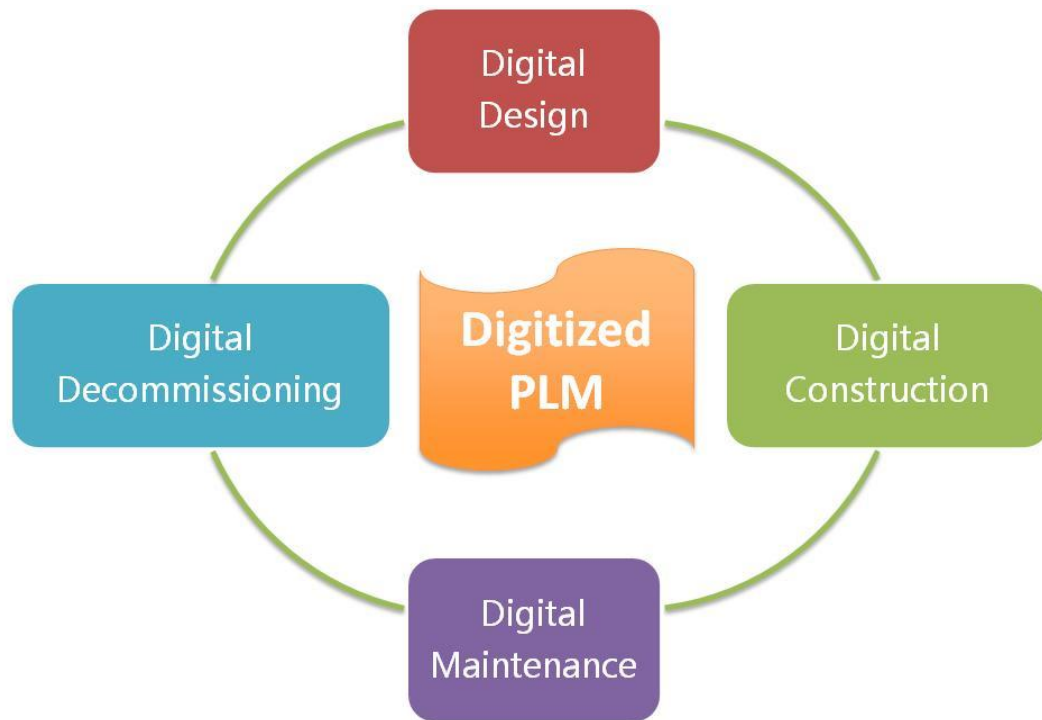
Technical support and engineering services to QS phase III CANDU-6 HWR



Chinese CAP1000/1400 with 1000~1400MWe development and design



2. Digitized PLM for NPP



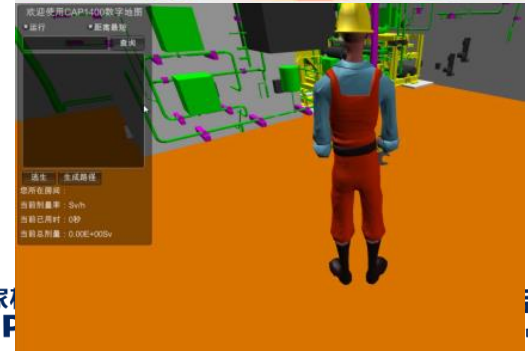
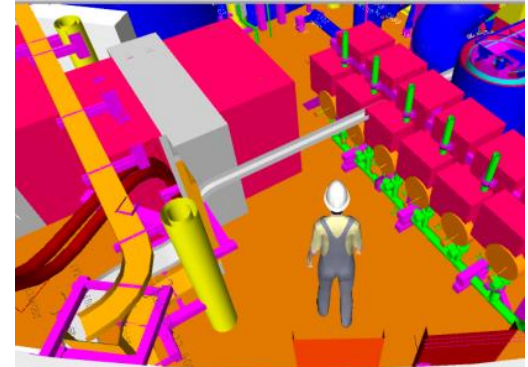
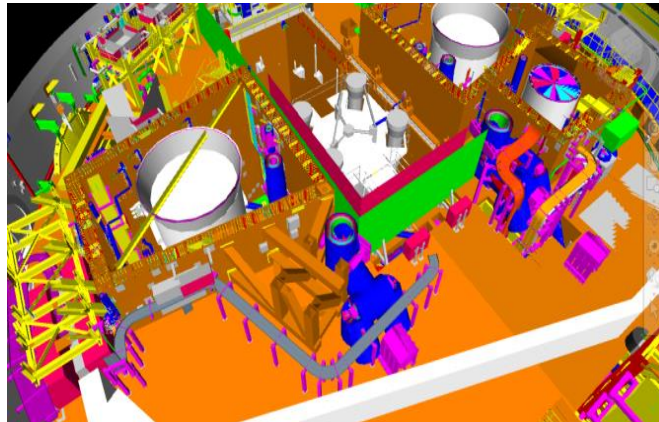
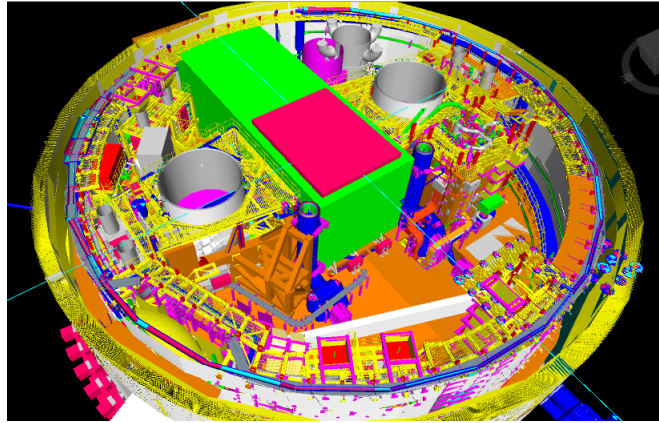
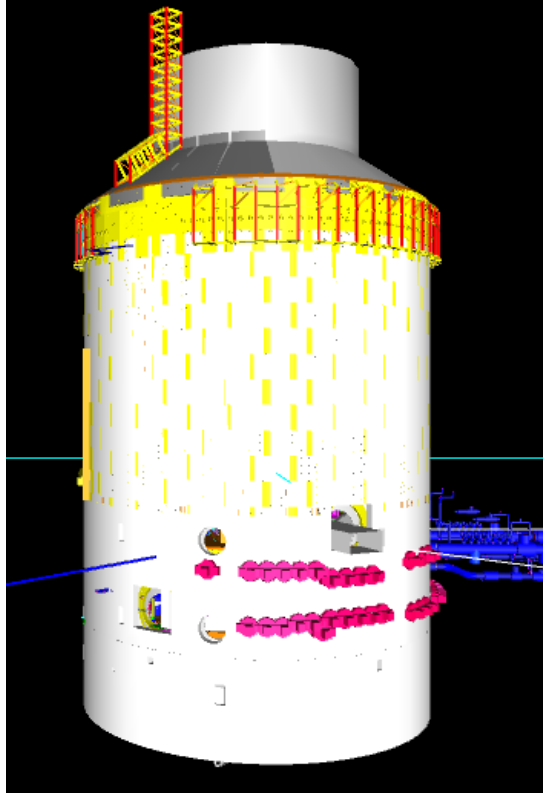
CAP1400

Life-cycle Management



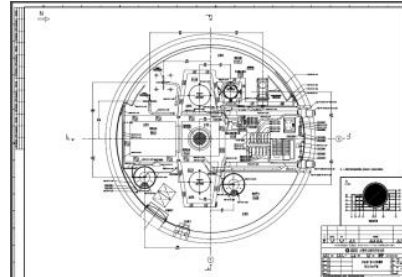
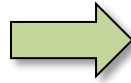
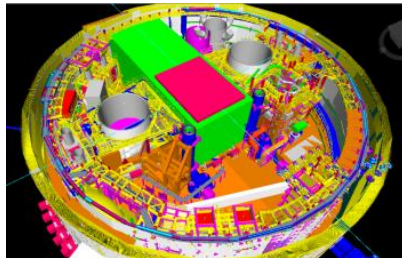
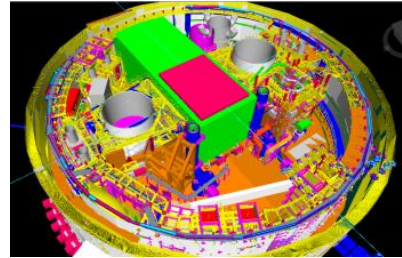
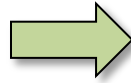
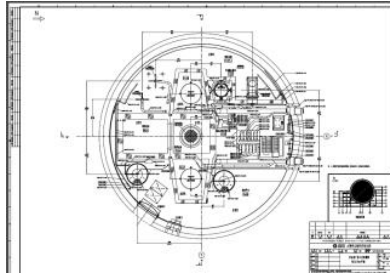
2. Digitized PLM for NPP

Digital Design



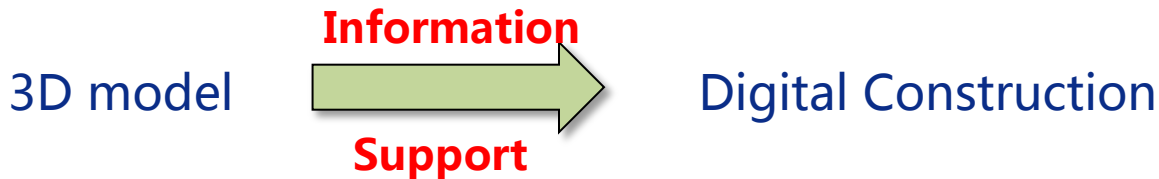
2. Digitized PLM for NPP

Digital Design



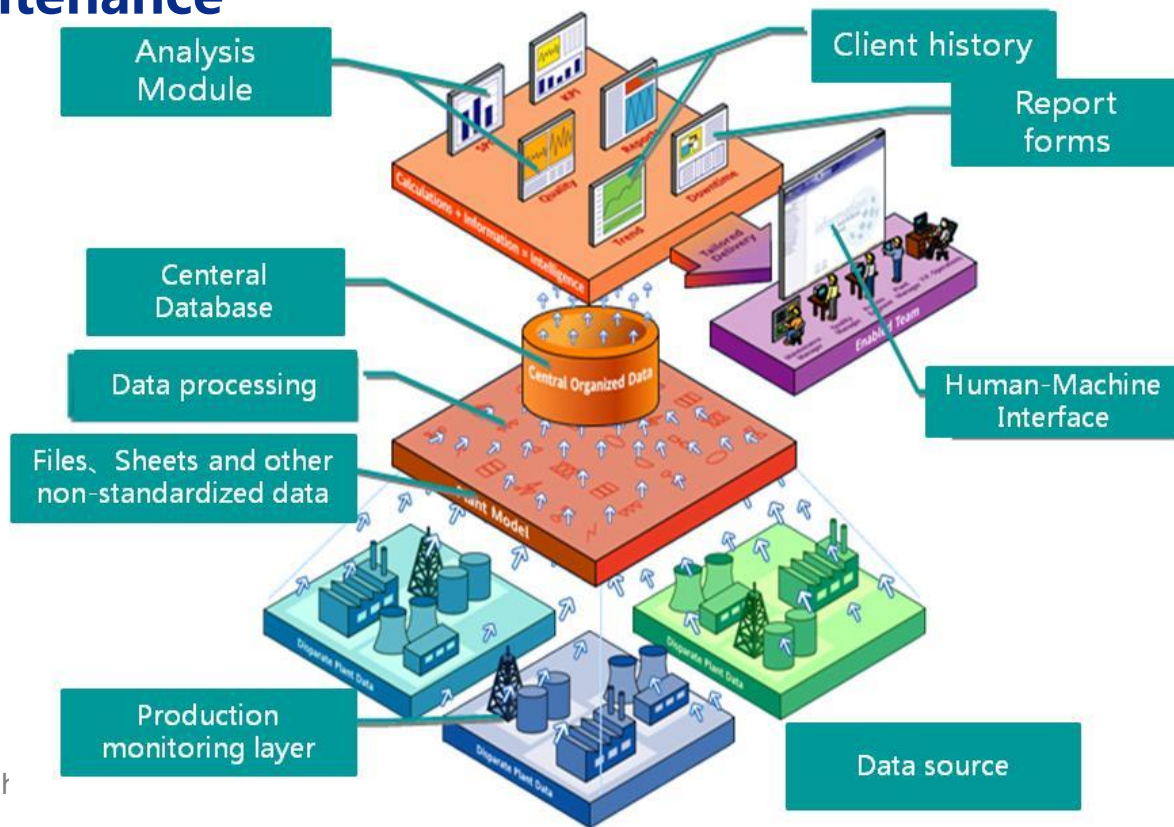
2. Digitized PLM for NPP

Digital Construction



2. Digitized PLM for NPP

Digital Maintenance



2. Digitized PLM for NPP

Digital
Design

Digital
Construction

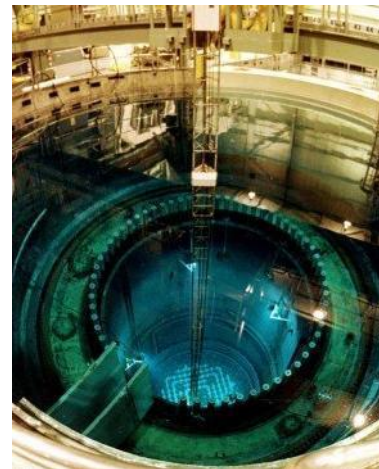
Digital
Maintenance

Configuration
Management



Activities, Data
Package

Decommissioning



Understand of struc
Schedule
Risk
Cost
Decision-making

3. Cutting-edge technologies for decommissioning

- Online Monitoring and Predictive Maintenance

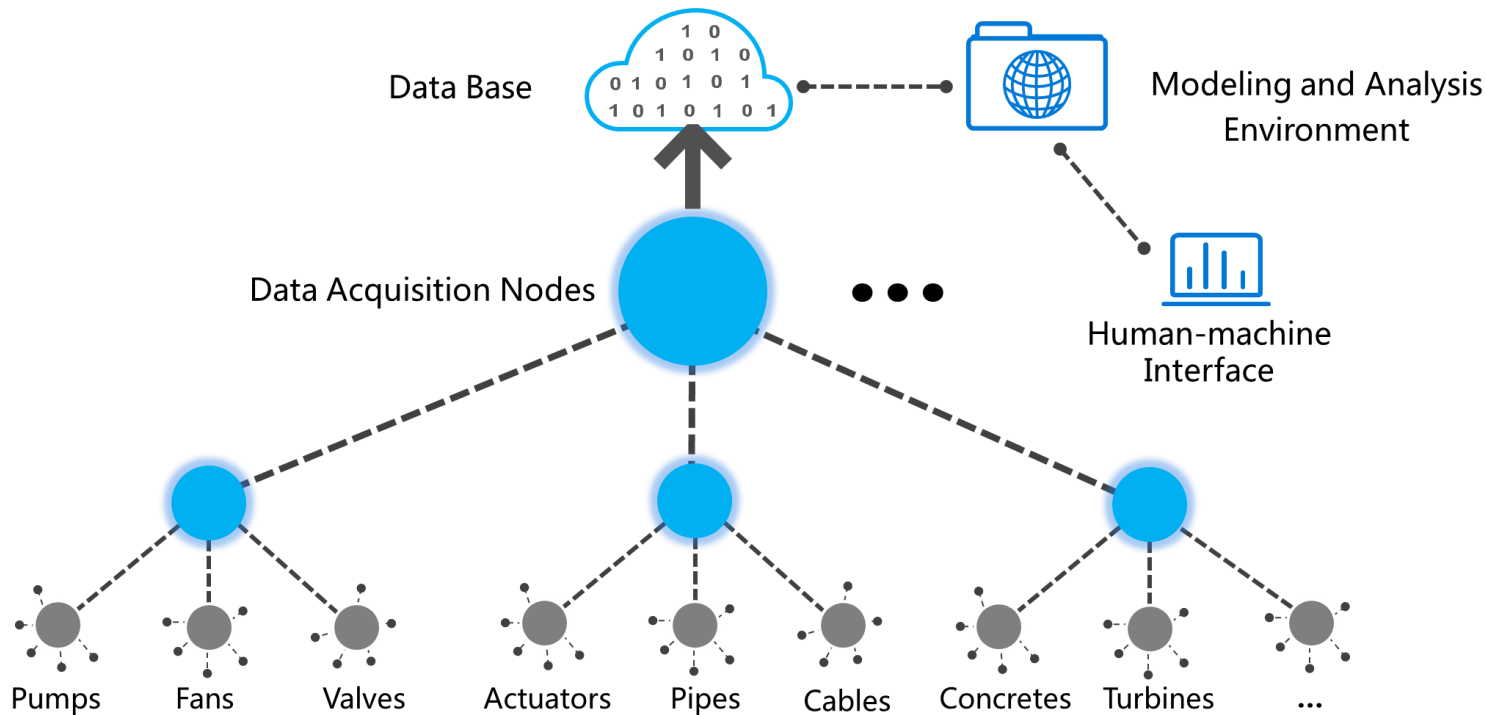
- VR

- AR



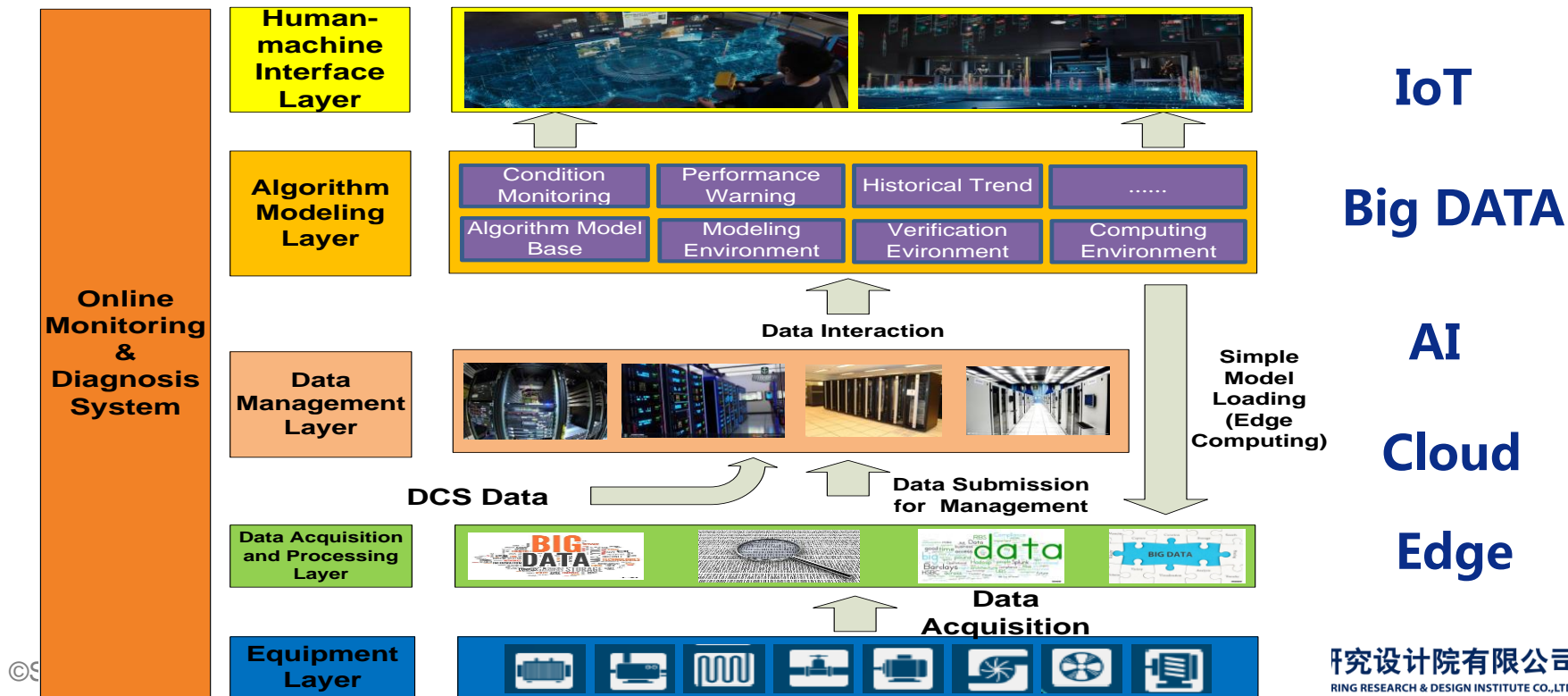
3. Cutting-edge technologies for decommissioning

Online Monitoring and Predictive Maintenance



3. Cutting-edge technologies for decommissioning

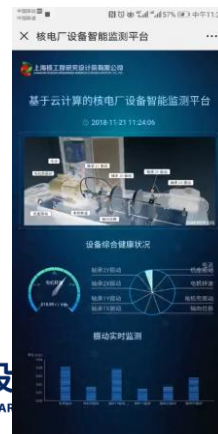
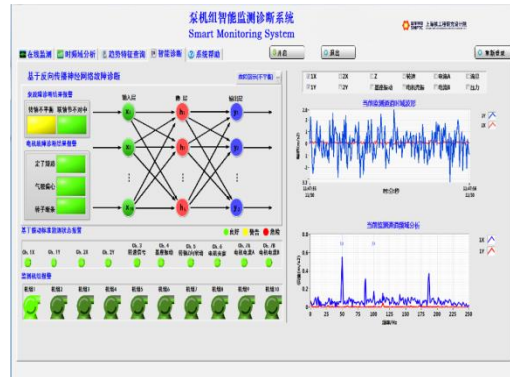
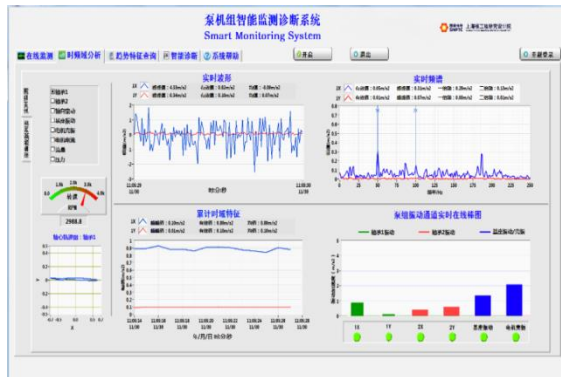
Online Monitoring and Predictive Maintenance



3. Cutting-edge technologies for decommissioning

Online Monitoring and Predictive Maintenance

- Equipment monitoring
- System monitoring
- Failure diagnosis
- Enhance safety

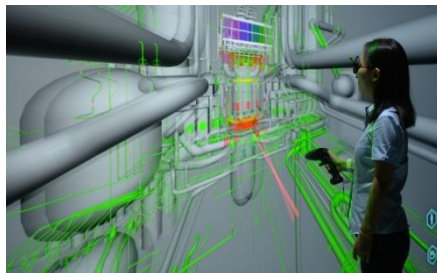
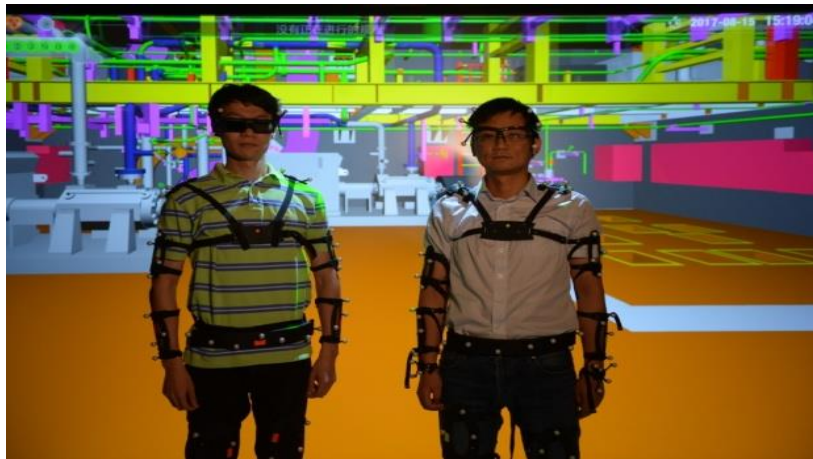


3. Cutting-edge technologies for decommissioning

VR

- Design verification and validation
- Route planning
- Plant decommissioning verification
 - Simulate the process of equipment dismantling
- Training
 - Equipment maintenance
 - Equipment dismantling

VR Technology Lab



3. Cutting-edge technologies for decommissioning

AR

- Equipment maintenance
- Equipment dismantling
- Training



4. Conclusion

- From PLM perspective, for the new built NPP, we can get prepared for decommissioning at the beginning of the NPP by digitized life-cycle management.
- Digital design, digital construction, digital maintenance can effectively support decommissioning.
- Decommissioning can collaborate with design, the cutting-edge technologies that we are trying to use in the design, can also be used in the decommissioning.



谢谢！
THANK YOU !