ROSENERGOATOM

NPP Design Basis Handover
and
Knowledge Preservation
from designer's part.
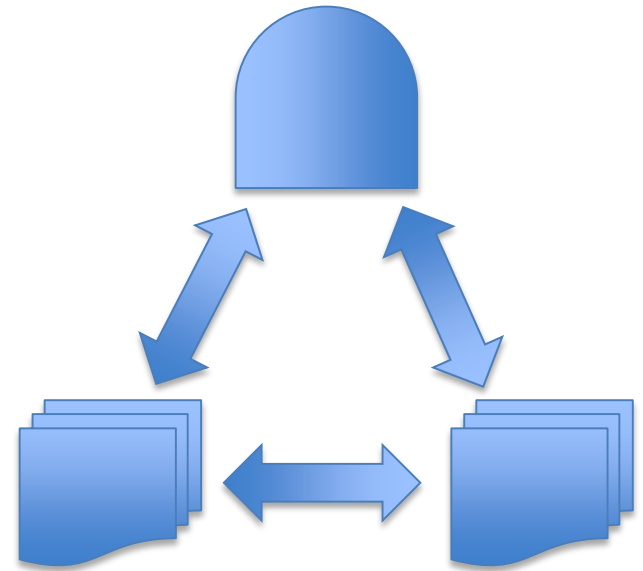
Anton L Nodel

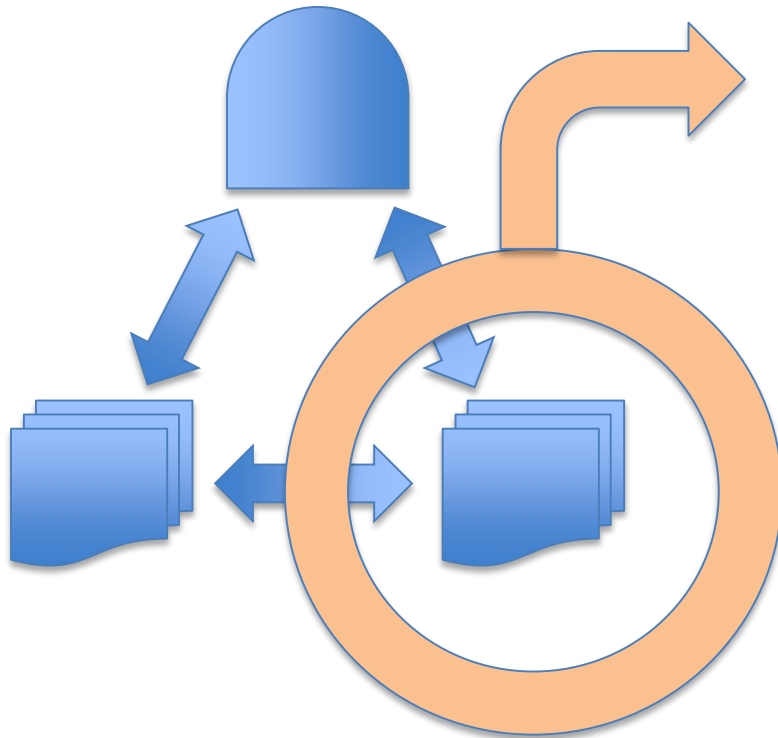30.05.2016

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The configuration management

Owner operator must reach the next state during the configuration management (CM) processes establishing:

The design basis for any NPP system or component is satisfied and maintained over plant life, as installed in the plant, and as reflected in documents

The source of design basis

The design basis for new NPP:
Design basis is formed on the stages of the siting, design, construction, commissioning.

Design basis now is partially created in
- PLM systems (like SPF or ENOVIA)
- CAD documents that have not the ability to be published to PLM
- output from calculation program
- manually created documents

Handover in the ideal life

PLM-based system that consolidate all even theoretically necessary data and supports Configuration Management.

Operating

Operating

Decommissioning

Handover in the ideal life

PLM-based system must cover a lot of different aspects:

Handover in the ideal life

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Handover in the ideal life

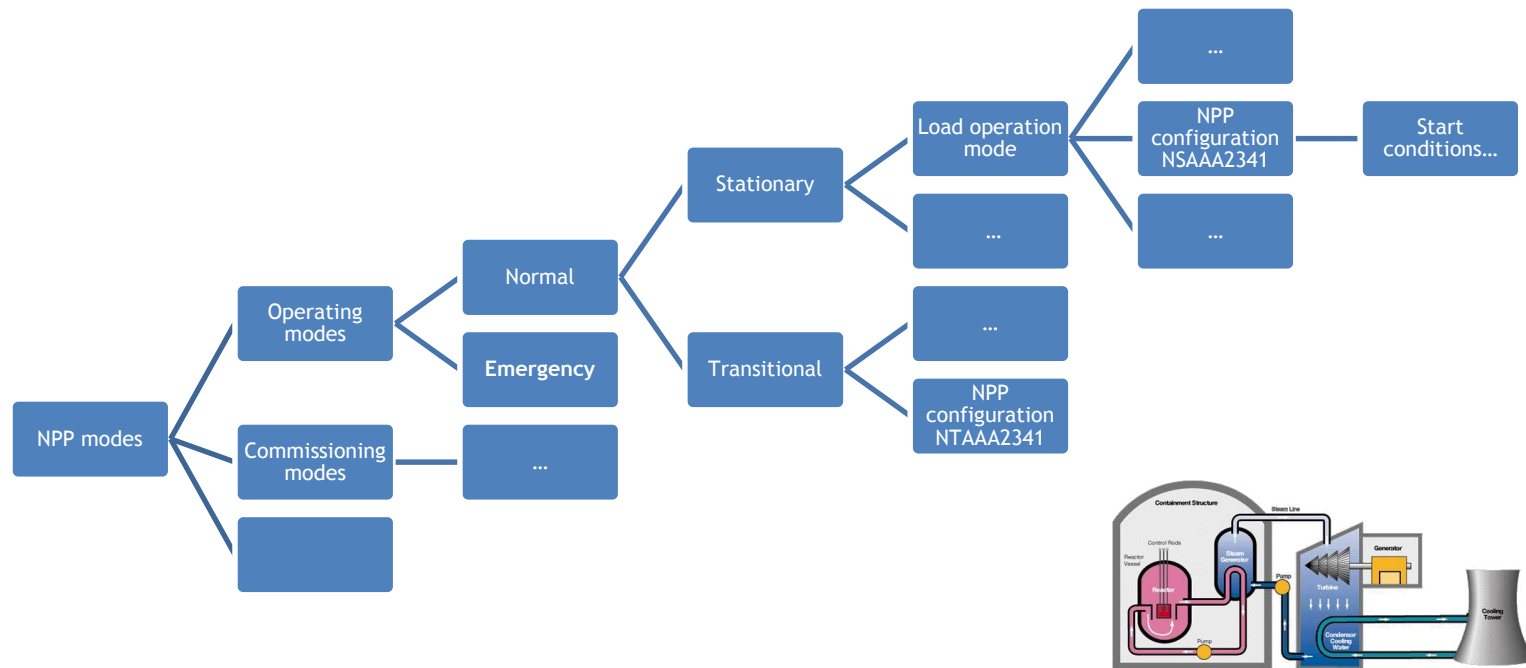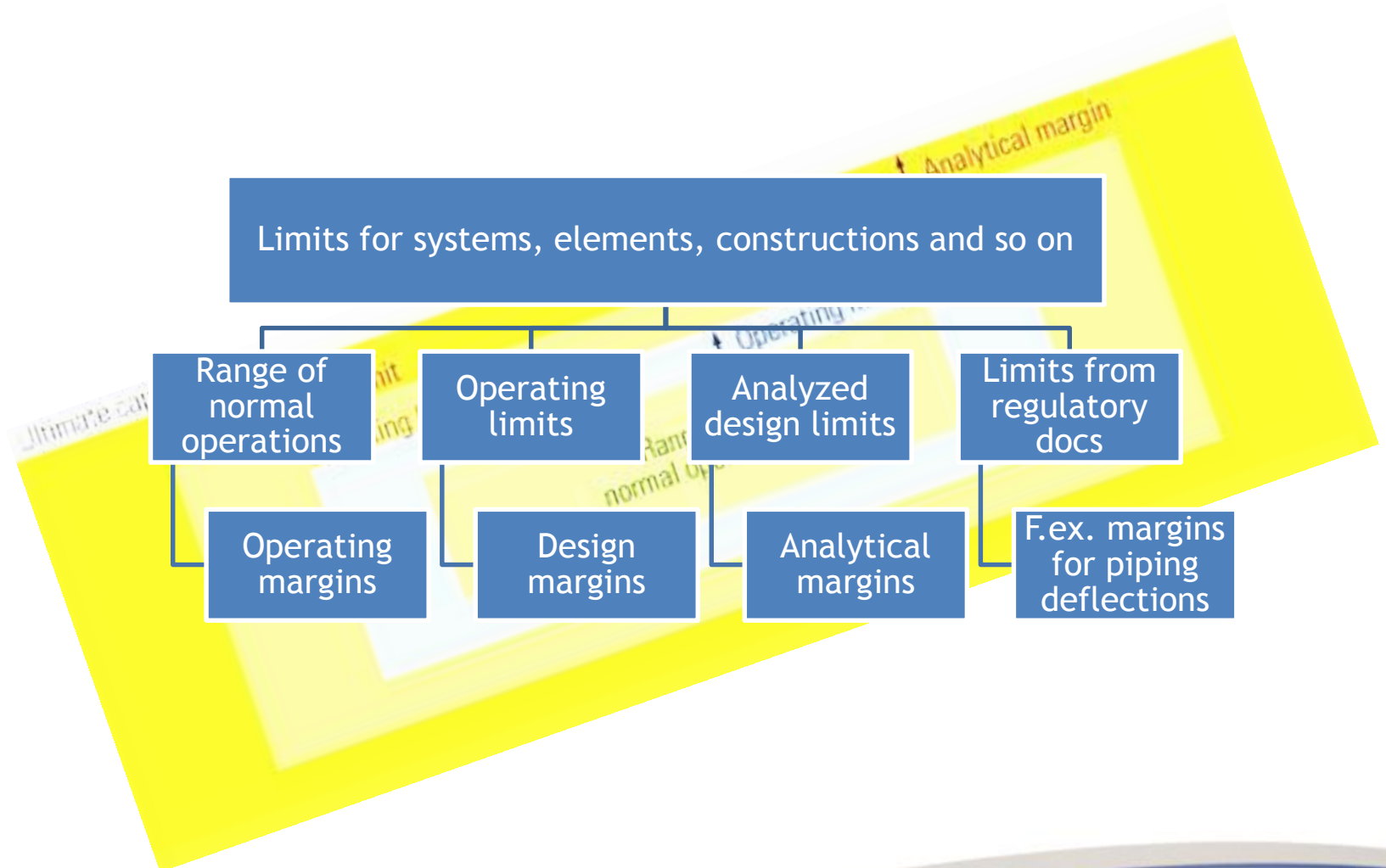**Limits for systems, elements, constructions and so on**

- Range of normal operations
  - Operating margins
- Operating limits
  - Design margins
- Analyzed design limits
  - Analytical margins
- Limits from regulatory docs
  - F.ex. margins for piping deflections

Handover in the ideal life

Other absolutely necessary hierarchies

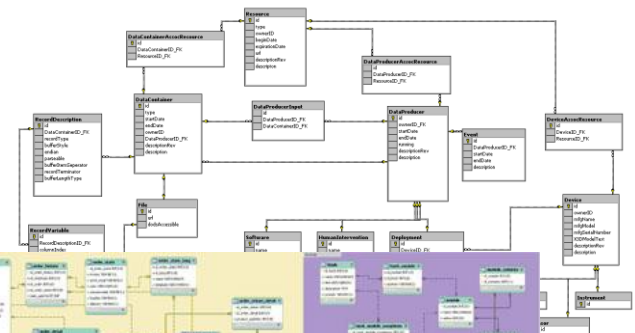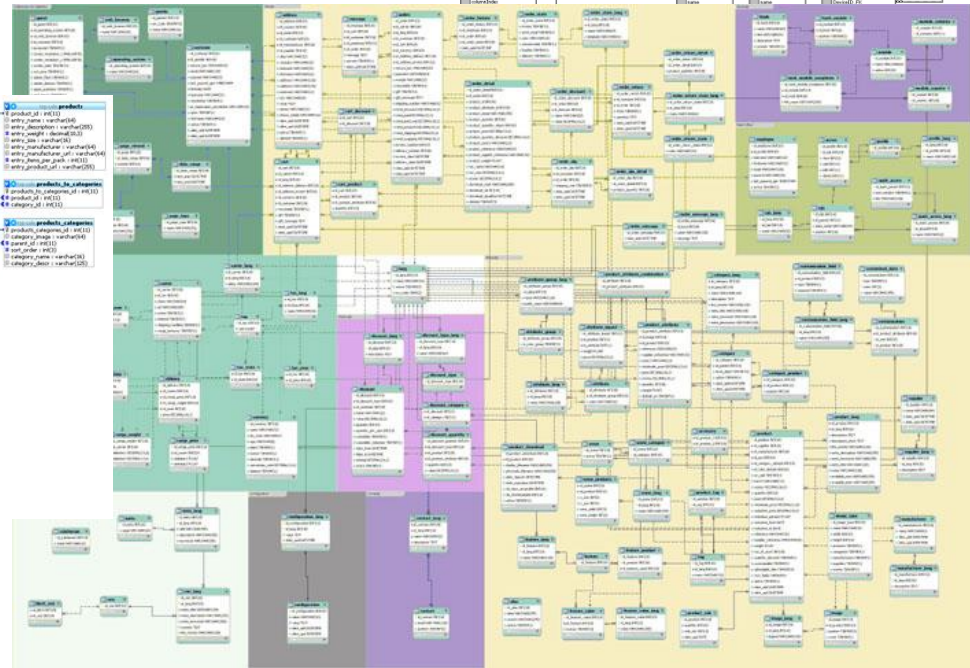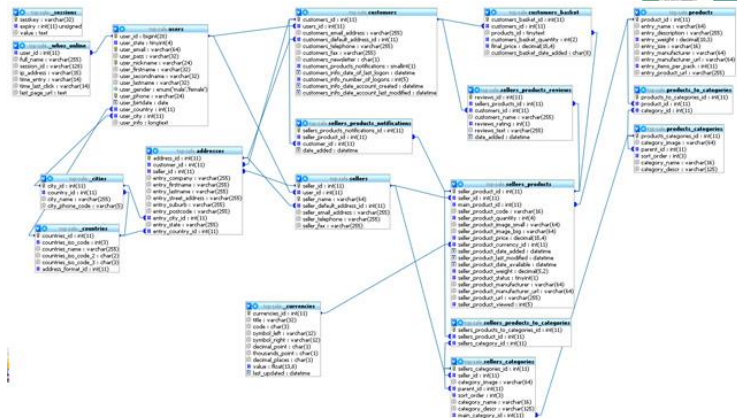| Documents	Operating personal	Calculations	Licenses	Baselines	...
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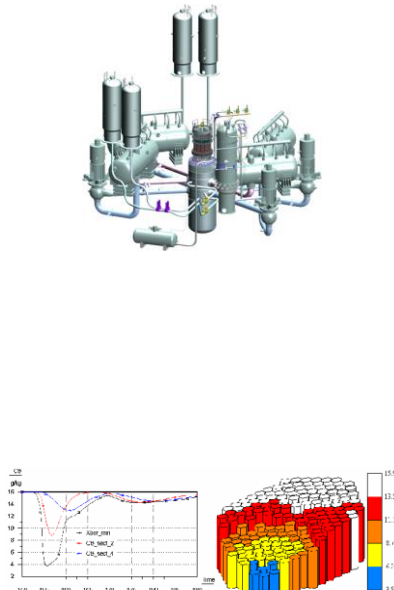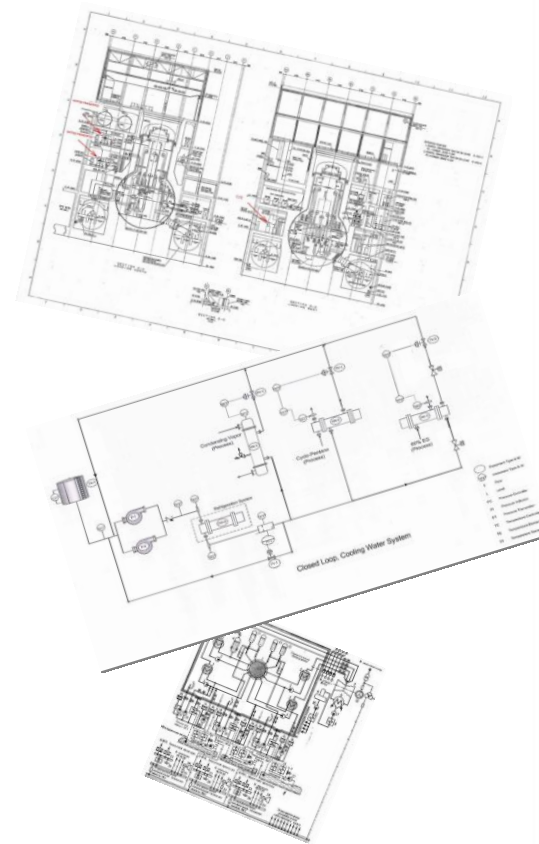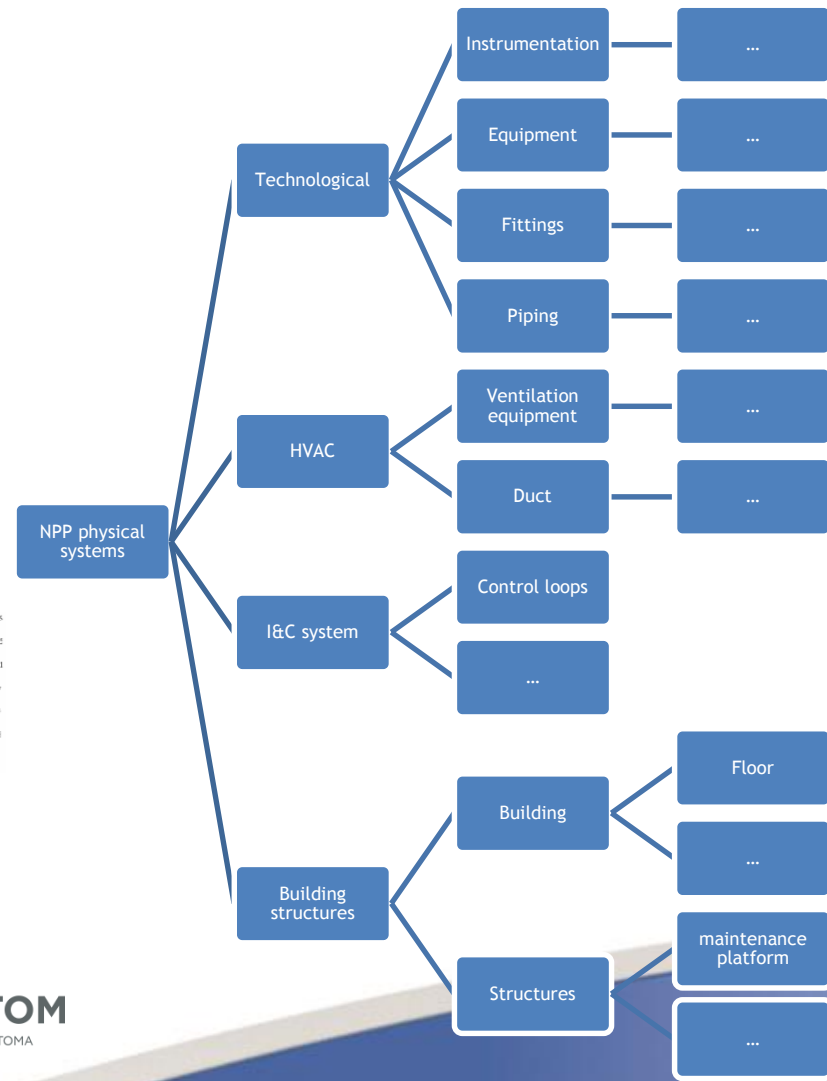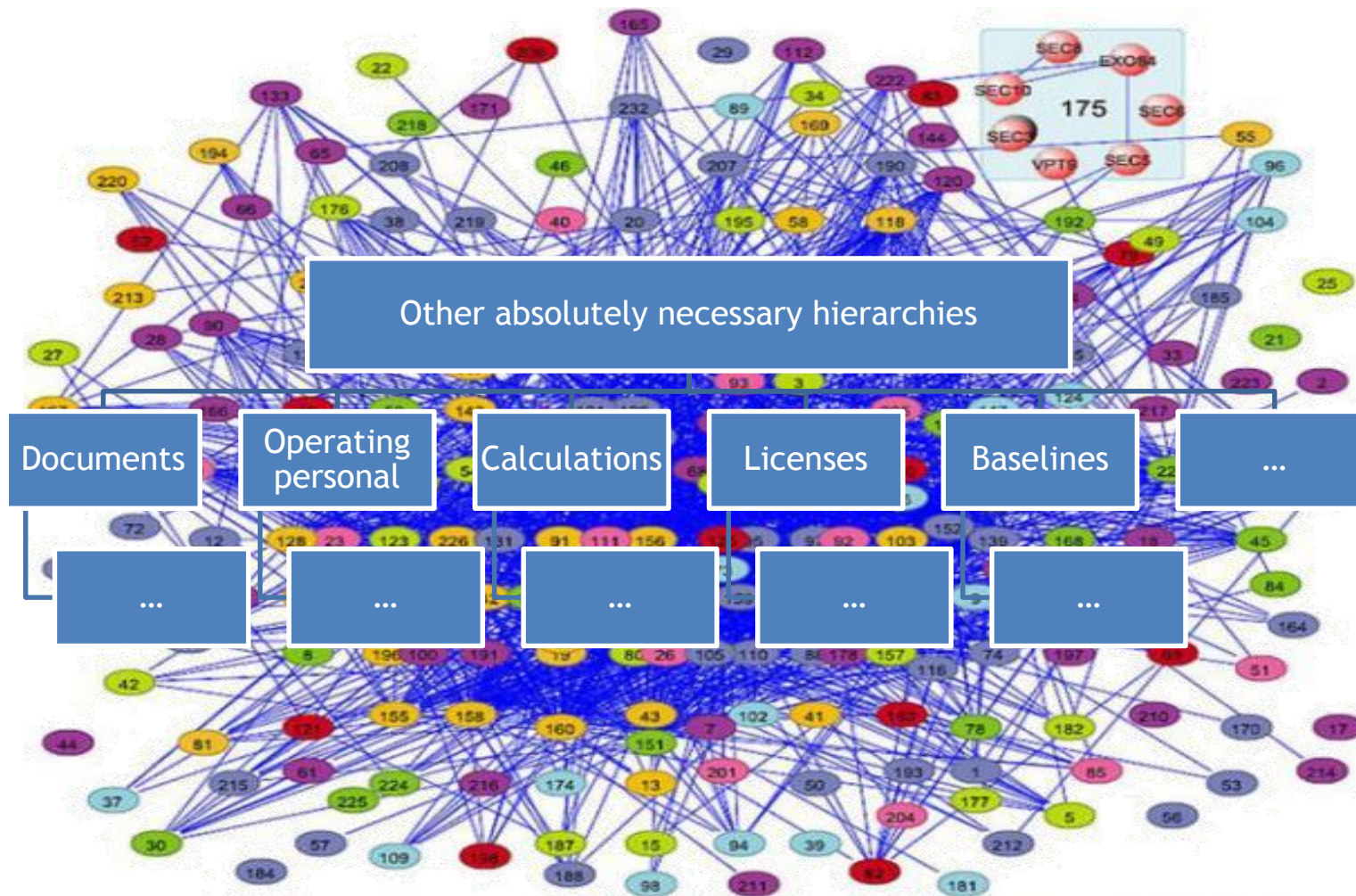
Handover in the ideal life

All these types of information to be placed in the PLM-based system.

Now we have no such system.

Traditional Russian questions:
What to do and who is to blame?!

Maybe all those are simply impossible in computer-based information-modelling environment for now?

Where the industry standard plant information model?

We are still waiting...

The main direction of force application today

Working with EPC contractor, suppliers for standardizations of plant information model elements (data sheets)

Creating the «adapters» for calculation programs for publishing data to basic PLM system used by designers

The maximum possible extension of the data model of the basic PLM system used by designers
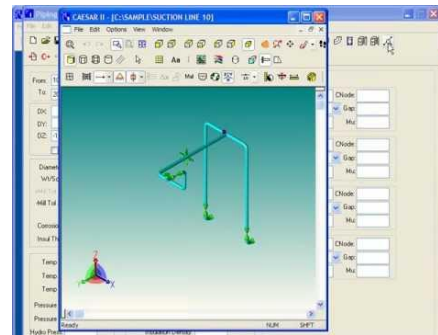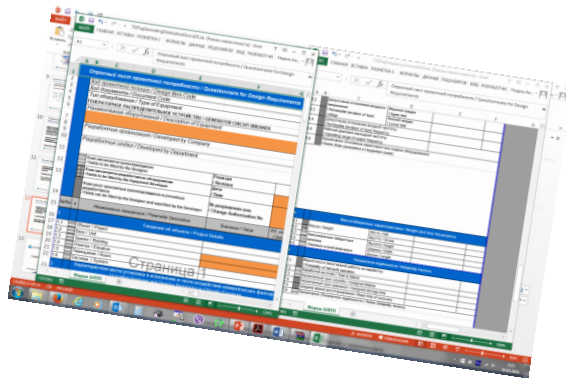
The main direction of force application today

Preparing for creation of RDF ISO 15926-based model data by data mining using an information extraction technology based on natural language processing

In conjunction with

Direct RDF model data creation as base for an information extraction technology

Thanks for attention!

Contacts:
Anton Nodel
nodel-a@pkf.rosenergoatom.ru

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