

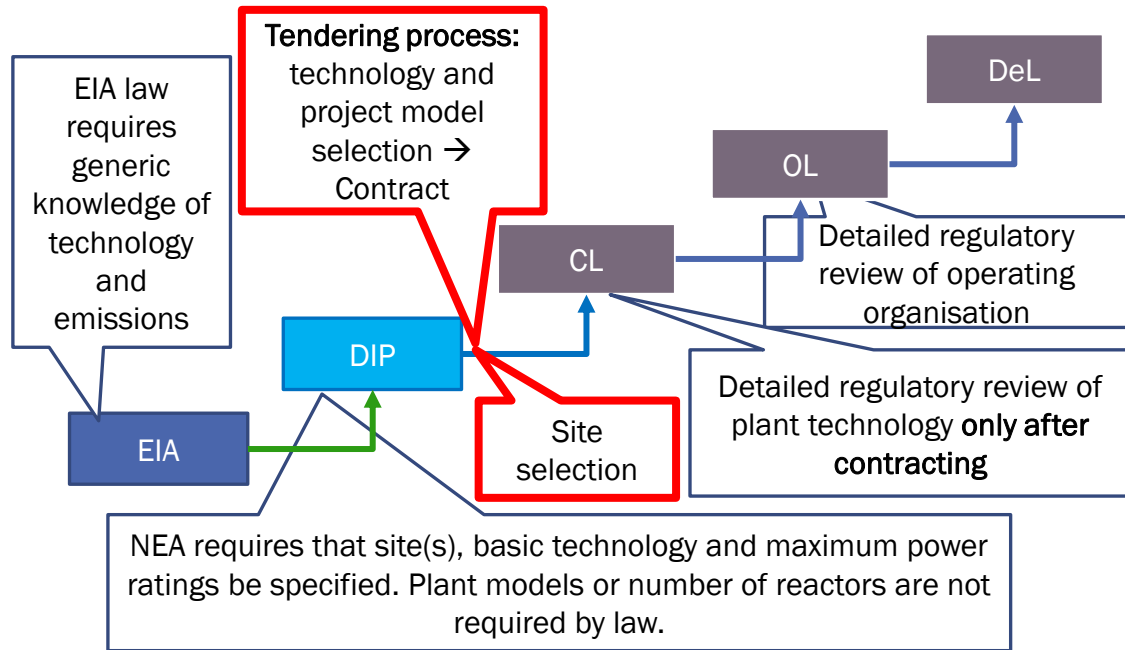
Streamlined licensing process

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Task 1.1 Streamlined licensing processes

- Identified challenge: to adapt for SMR the regulatory processes for
 - series production model and
 - wide geographical deployment possibilities.
- Regulatory processes operate on two separate abstraction levels:
 1. Government decision making (DIP, CL, OL) managed by MEAE – “licensing”
 2. Technical regulatory control performed by STUK – ” oversight”
- Initiative, and responsibility for safety, always rests with an *applicant*
 - Current legislation assumes that for a given project, there is one applicant that is responsible for everything: site, technology, operations

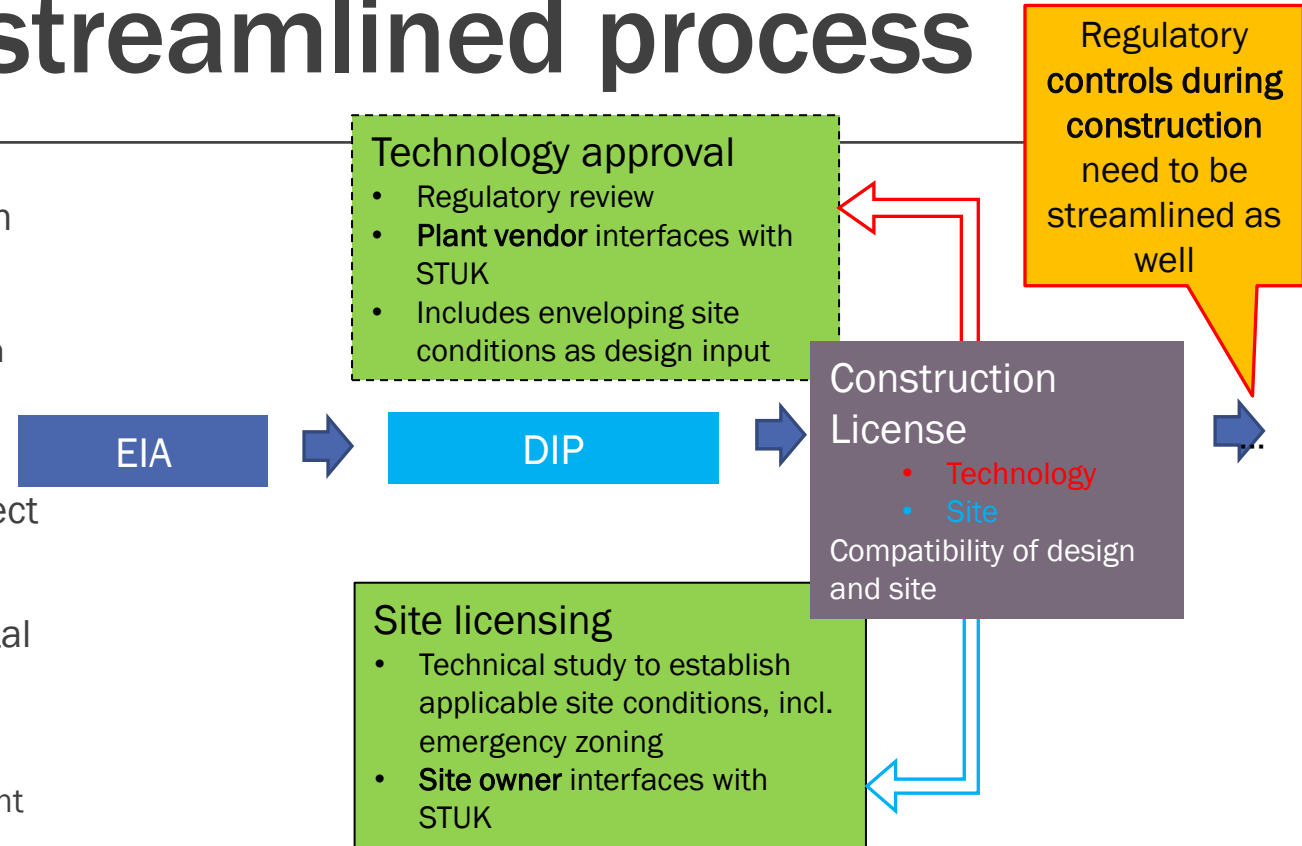
Task 1.1 Current licensing processes



- Nuclear Energy Act specifies a decision-making path well suited for individual large projects run by **one applicant**
- Multiple reactors and/or multiple sites CAN be included
- Other applicants cannot leverage approved sites or technologies directly – STUK’s assessments have to be redone every time
- Delivery contract has to be closed **before** there is knowledge of how the stated regulatory requirements are actually to be implemented in the plant → major cost and schedule uncertainty

Task 1.1 Proposed streamlined process

- **Proposed** licensing model. Technology and Site can each be licensed/approved **independent of projects**, by the respective owners, to the depth typical to CL process
 - Explicit legal authorisation/requirement to STUK to grant such approvals seems necessary
- Under this model, an applicant can leverage approved designs and licensed sites, thereby much reducing project uncertainty.
- However, current understanding is that the Environmental Impact Assessment will have to precede the DIP/CL phases
 - Technical detail in EIA limited as enveloping assumptions of technology have to be made – unless there is firm commitment to some technology already at this early point
 - Position of EIA in the project-specific licensing process is subject to inter-ministerial discussions



Task 1.1 Streamlined licensing processes

Current regulations presume a “license holder” who alone is responsible of safety

Underlying assumptions include that

- Plants are owned by large (national) energy companies that have broad in-house competence
- Industrial base can provide dedicated contracted services (e.g. specialty manufacture) at reasonable cost

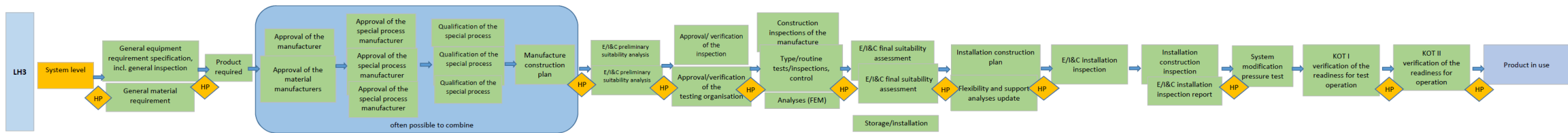
New build experience has invalidated both beliefs.

Responsibility must be **reallocated** to capable parties. Limits of allocation – e.g. level of technology competence required to act as an “Intelligent Customer” capable of establishing a “Design Authority” needs to be clarified further

	Old license holders	New holders or respective authorisations
Technology	Plant owner <ul style="list-style-type: none"> • Outsources to Vendor 	Vendor/IPR holder , via Design Certification
Site	Plant owner	Site owner – can be Owner of Plant owner, or transfer site to Plant owner for the project
Operations	Plant owner	Plant owner <ul style="list-style-type: none"> • May outsource to a Service provider
Liability	Plant owner	Plant owner
Waste management	Plant owner (financial) <ul style="list-style-type: none"> • may outsource activities to a daughter company 	Plant owner (financial) <ul style="list-style-type: none"> • May outsource activities to a Service provider

Task 1.1 Streamlined licensing processes

- Work ongoing on streamlining regulatory oversight functions
 - Tight coupling with design, safety case development, and safety classification
 - Current YVL Guide requirements for higher safety classes are impractical for SMRs
 - E.g. for each SC 2 valve design, 16 consecutive activities with 11 regulatory hold points / approvals are stipulated before an item can be installed



- Work is underway elsewhere (KELPO-project run by the power companies) to rationalize this

Conclusions & takeaway

- General shape of a new, streamlined licensing process for nuclear reactors is emerging
 - Regulatory approvals of Technology and Site to be sought by respective Owners, independent of specific projects
 - Eventual projects can leverage granted approvals

Thank you!
