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Safety Commission

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Role of Regulatory Hold Points in NPP Construction

Building Smarter: Accelerating Advanced Reactor Construction

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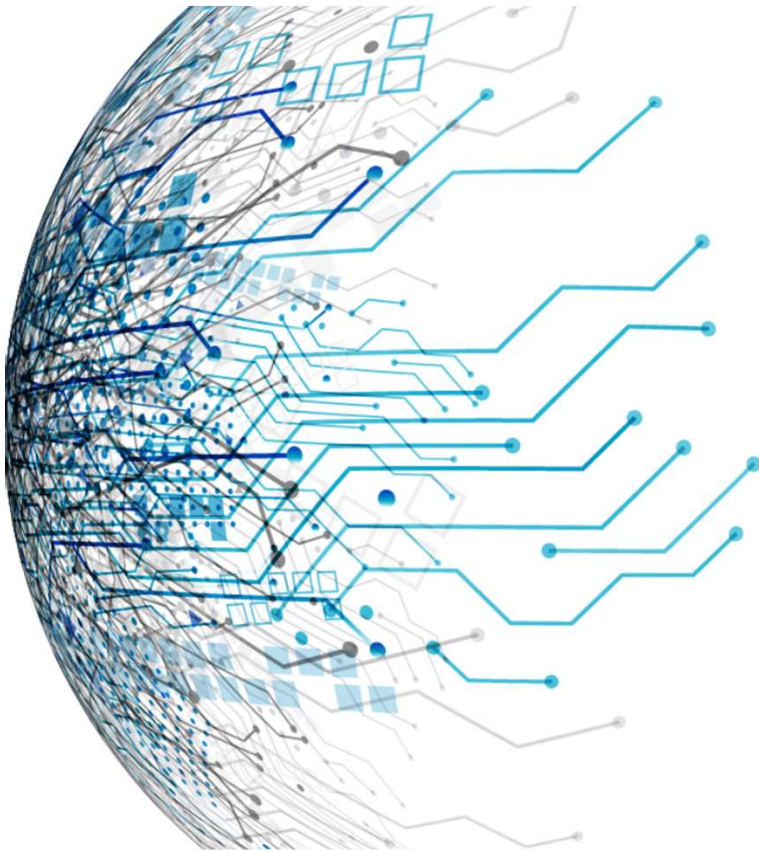


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OVERVIEW



A MODERN AND AGILE NUCLEAR REGULATOR

WHAT IS A REGULATORY HOLD POINT

REGULATORY HOLD POINTS: REFURBISHMENTS

REGULATORY HOLD POINTS: NEW FACILITIES

CASE STUDY: DARLINGTON NEW NUCLEAR PROJECT

MANAGING NOVEL CONSTRUCTION TECHNIQUES

ADVANTAGES OF REGULATORY HOLD POINTS

CONCLUSION



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THE CNSC IS AN EFFECTIVE & EFFICIENT REGULATOR

EFFECTIVE

Robust, performance-based
regulatory framework

Enables innovation through a technology
neutral regulatory framework and
vendor design reviews

Promotes transparent, flexible, and risk-
informed business processes



EFFICIENT

Conducts efficient reviews of licence
applications (e.g. Licence to Construct
reviewed in 26 months)

Prioritizes readiness activities for technologies
with high probability of deployment in Canada

Prioritizes high-risk activities, and reduces
effort on low-risk activities

**REGULATORY HOLD POINTS ARE AN EXAMPLE OF OUR
EFFICIENT AND EFFECTIVE APPROACH TO REGULATION**

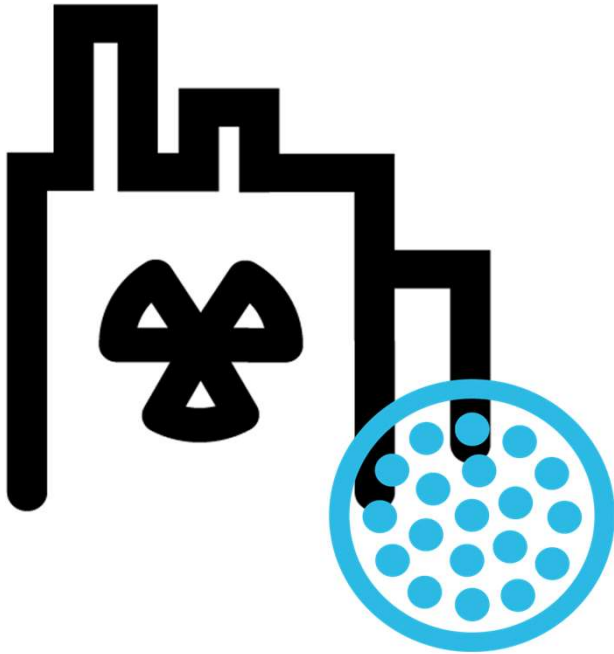


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REGULATORY HOLD POINTS: FACILITY REFUBISHMENTS



A refurbishment is an enhancement of equipment and systems that can extend a nuclear power plant's life by several decades.

Regulatory hold points enable a step-by-step progression of activities during the refurbishment of nuclear facilities. Authorization is needed at each of the 4 steps before a facility's return to service:

- 1) loading fuel into the reactor
- 2) removing the guaranteed shutdown state and starting the reactor
- 3) exceeding 1% full power
- 4) exceeding 35% full power

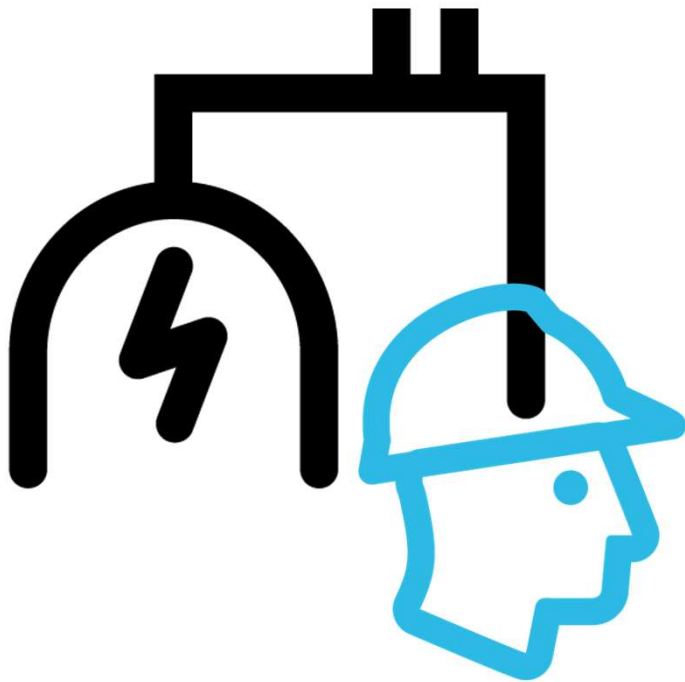


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REGULATORY HOLD POINTS: NEW FACILITIES



Licensees are required to adhere to Regulatory Hold Points (RHPs) established during the licensing process for new reactor facilities.

RHPs for new reactor facilities primarily focus on the analysis and design of structures, as well as systems and components that are important to safety.

RHPs are established may vary depending on the type of facility and the licensing phase of the project.



DARLINGTON NEW NUCLEAR PROJECT (DNNP)

REACTOR TYPE	# UNITS	INSTALLED CAPACITY	STATUS
GVH BWRX-300	1	300 MWe (upon operation)	Licence to Construct (LTC) granted April 2025 3 RHPs - RHP 1 March 2026; RHP 2 Q3 2027; RHP 3 Q1 2028



DNNP is the 1st power plant Licence to Construct granted by the Commission in 40 years

CNSC staff reviewed the application in 26 months, noting that the GVH BWRX 300 design process was still underway.

To support efficient regulatory oversight of the iterative design process, CNSC staff proposed 3 RHPs allowing:

- 1) Installation of the reactor building foundation
- 2) Installation of the reactor pressure vessel
- 3) Fuel-out commissioning

CNSC staff verify requirements are met prior to removal of the RHP. This includes site inspection verification activities.




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HOW REGULATORY HOLD POINTS SUPPORT NOVEL CONSTRUCTION TECHNIQUES



Regulatory hold points support regulatory efficiency by allowing design and construction to advance in parallel, while ensuring safety, security and environmental protection remain paramount



CNSC staff ensure requirements are met before the RHP can be recommended to be removed

Novel Construction Technique Example

Diaphragm Plate Steel Composite which is used as an alternative means of containment in the GVH BWRX-300 small modular reactor design



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ADVANTAGES OF REGULATORY HOLD POINTS

There are three key advantages of regulators utilizing regulatory hold points for the construction of nuclear power plants

Allow for efficient regulation through risk-informed control over key milestones, providing regulatory certainty and predictability, within the Licensing Basis established by the Commission

Early detection of potential systemic issues

Enable the licensing of first of a kind reactor technologies, removing regulatory barriers to innovation

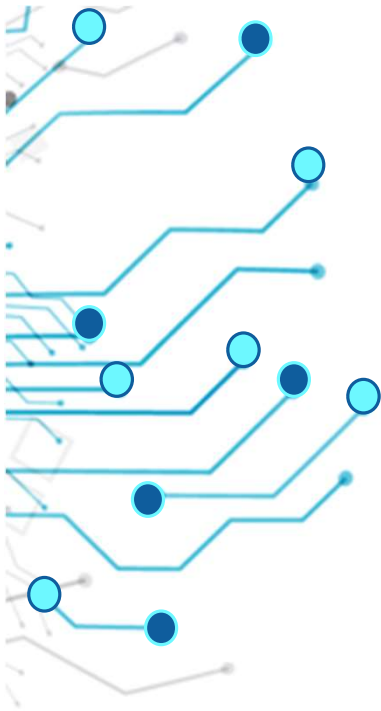


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CONCLUSION



The CNSC is an efficient and effective regulator that applies risk-informed approaches, such as regulatory hold points, to oversee major nuclear projects.

Regulatory holds points are mandatory checkpoints that have been used to enable controlled, phased advancement of activities within the licensing basis.

Regulatory hold points contribute to efficient regulation by allowing CNSC staff to verify requirements have been met without compromising safety while providing regulatory certainty.

Thank you

Stay connected!

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