



Regulatory Requirements and Licensing of OPG's DGR Project

OPG's Deep Geologic Repository
Project for Low and Intermediate
Level Radioactive Waste

Presentation to Joint Review Panel

July 18, 2012

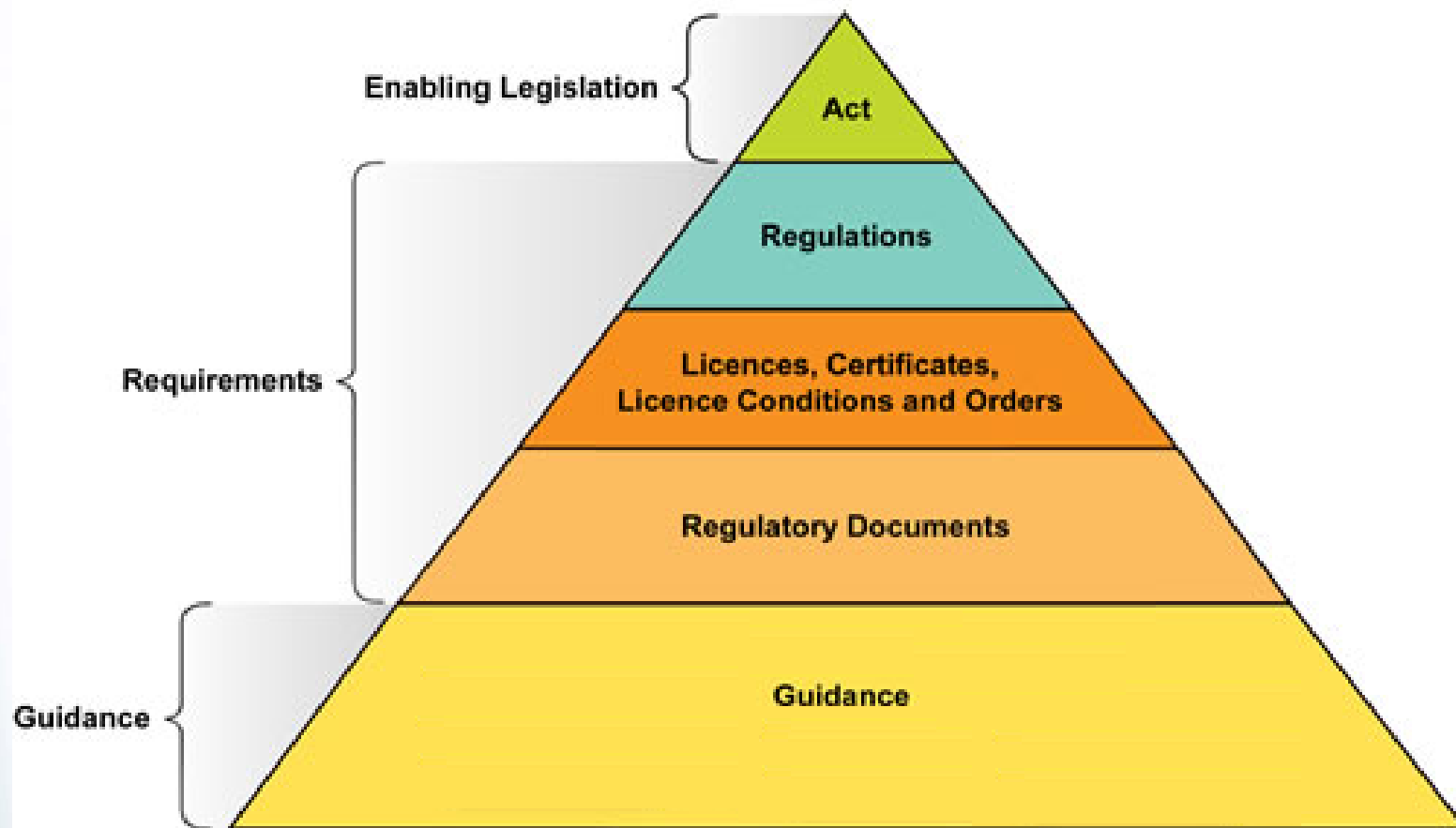


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Overview

- CNSC Regulatory Framework
 - Philosophy and approach
- CNSC Licensing Process
 - Licence and Licence Conditions Handbook (LCH)
- CNSC Compliance Process
 - Compliance Verification Activities
- Project Sequencing
 - Compliance Verification Milestones

CNSC Regulatory Framework



CNSC Regulatory Framework

Act and Regulations provide for

- Phased and lifecycle-based licensing process
- Non-prescriptive regulation, focused on key performance based dose limits
- Licensee accountability and responsibility
- Regulatory verification and control
 - limits, requirements, records and reports; prohibitions; punishments; inspection and verification of licensee compliance

CNSC Regulatory Framework

Under the Regulatory Framework

- ***Licenseses*** are responsible for the safe management and operations of their licensed activities and/or facilities in a manner that protects health, safety, security and the environment while respecting Canada's international obligations (*NSCA and Regulations plus applicable Federal and Provincial Regulations and CNSC Licence*)
- ***CNSC*** is responsible for developing and implementing a comprehensive compliance verification program that will verify that licensees discharge their responsibilities in accordance with the Act, Regulations, and their licence.

CNSC Regulatory Framework

NSCA, s.24 - Licences

- Licences may be issued, renewed, amended or replaced when, in the *opinion* of the Commission, the applicant
 - is qualified; and
 - will make adequate provision for the protection of the environment, health, safety, and security.
- Licenses include terms and conditions for further requirements, in addition to requirements of the Act and its associated regulations

CNSC Regulatory Framework

“Qualified”

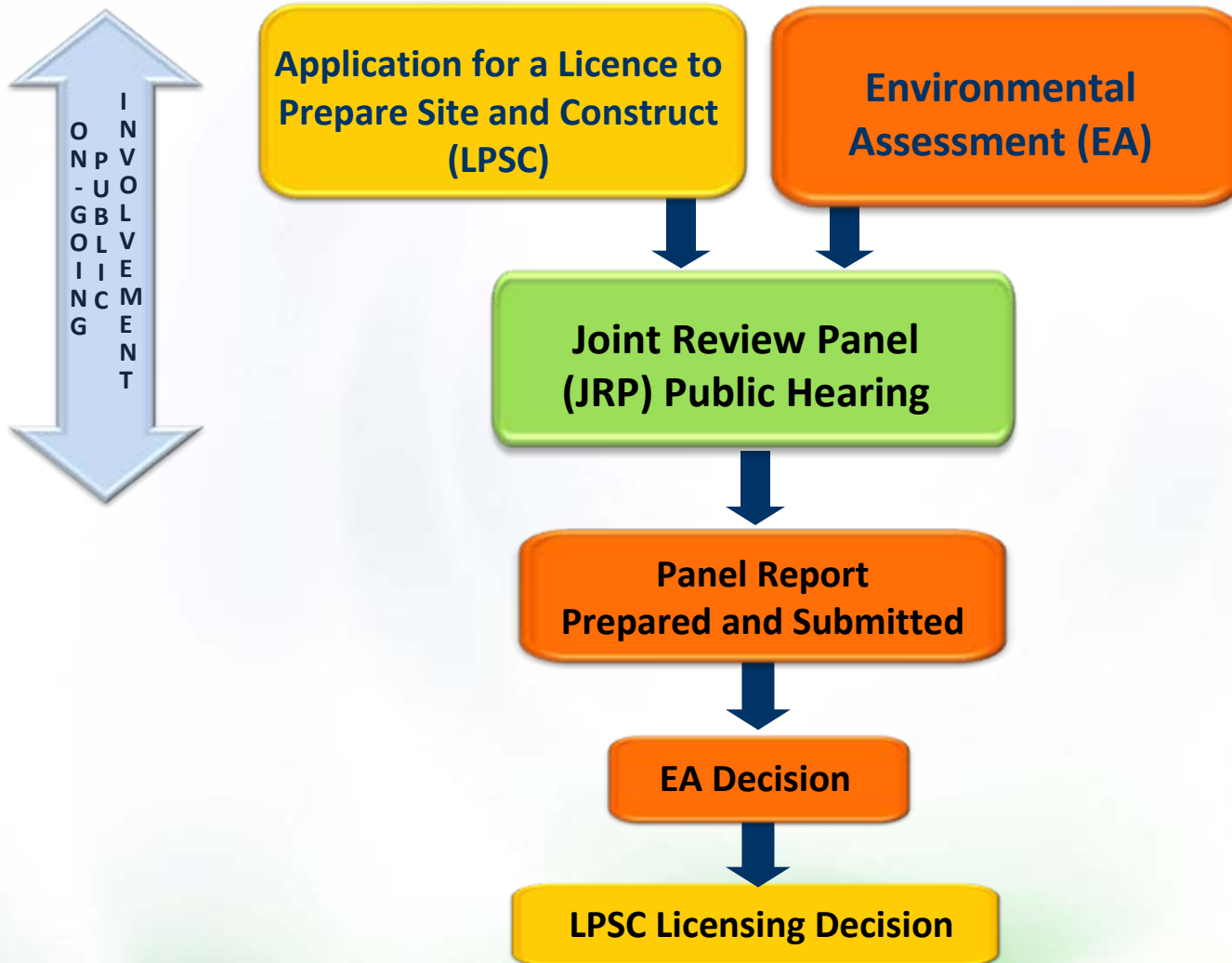
- Is based on the activities to be authorized relative to the **use or possession of the nuclear energy** that necessitates NSCA regulation and the abilities and experience of the applicant in relation to the request
- Considers the nuclear lifecycle and regulatory framework
- Does not necessitate that all expertise reside solely within an applicant's organization
- Does necessitate that the applicant have the mechanisms needed to obtain the required expertise and ensure fulfilment of their responsibilities under the Act and its associated regulations to protect the environment, health, safety and security.

CNSC Regulatory Framework

“Will make adequate provision”

- Is based on the activities to be authorized relative to the ***use or possession of the nuclear energy*** that necessitates NSCA regulation, the other associated activities, and the applicant’s submission
- Considers the nuclear lifecycle and the regulatory framework
- Does necessitate that the applicant has mechanisms to ensure provision details develop, and responsibilities under the Act and its associated regulations to protect the environment, health, safety and security are fulfilled
- Does not necessitate that all provision details during application process as many of the engineering details can be addressed during the compliance verification process.

DGR Licensing - JRP Process



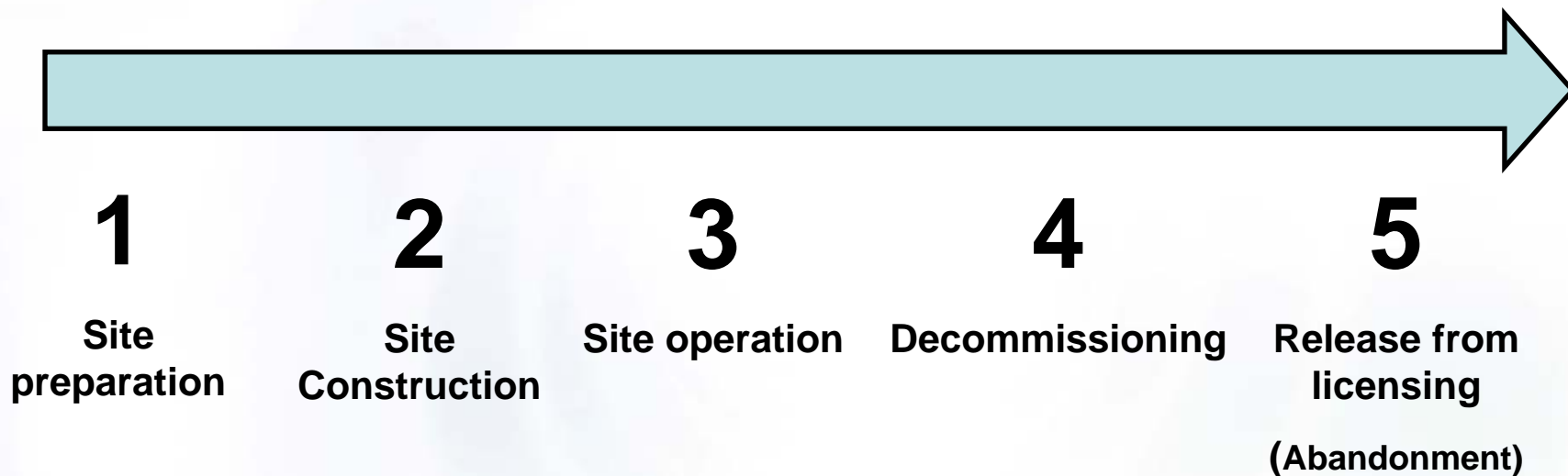
Scope of the CNSC Staff Reviews

Environmental Assessment (EA) identifies

- likely adverse environmental effects over the lifecycle of the project
- possible mitigation measures
- the significance of any remaining adverse effects after considering the mitigation measures

Overview

CNSC Licensing Stages

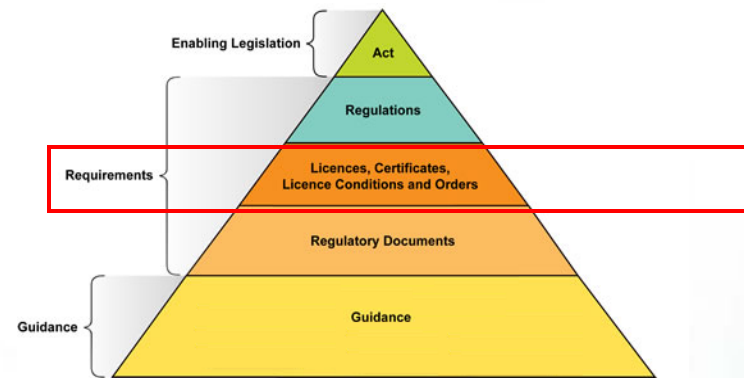


Staged approach / Early planning

CNSC Licensing Process

Obligations

- **Applicant/Licensee**
 - Health and safety
 - Security
 - Environmental protection
 - Monitoring and reporting
 - Financial guarantee
 - Proactive disclosures
- **CNSC**
 - Evaluate applicant
 - Recommend licence conditions
 - Compliance verification activities



CNSC Licensing Process

CNSC Regulatory Requirements and Guidance

CNSC Regulations

- *General Nuclear Safety and Control Regulations*
- *Class I Nuclear Facilities Regulations*
- *Radiation Protection Regulations*

Regulatory and Guidance Documents for DGR Project

- P-290 Managing Radioactive Waste
- P-223 Protection of the Environment
- P-119 Policy on Human Factors
- RD/GD-99.3 Public Information and Disclosure
- S-296 Environmental Protection Policies, Programs, and Procedures at Class 1 Nuclear Facilities and Uranium Mines and Mills
- G-296 Developing Environmental Protection Policies, Programs and Procedures at Class 1 Nuclear Facilities and Uranium Mines and Mills
- G-320 Assessing the Long Term Safety of Radioactive Waste Management
- G-276 Human Factors Engineering Program Plans
- G-278 Human Factors Verification and Validation Plans
- G-129 Keeping Radiation Exposures and Doses “As Low as Reasonably Achievable (ALARA)”
- G-206 Financial Guarantees for the Decommissioning of Licensed Activities
- G-219 Decommissioning Planning for Licensed Activities

CNSC Licensing Process

Other Regulatory Requirements and Commitments

Federal

- *Migratory Birds Convention Act*
- *Species at Risk Act (SARA)*
- *Explosives Act*
- *Fisheries Act*
- *Environmental Protection Act*
- *National Building Code*
- *National Fire Code*

Provincial

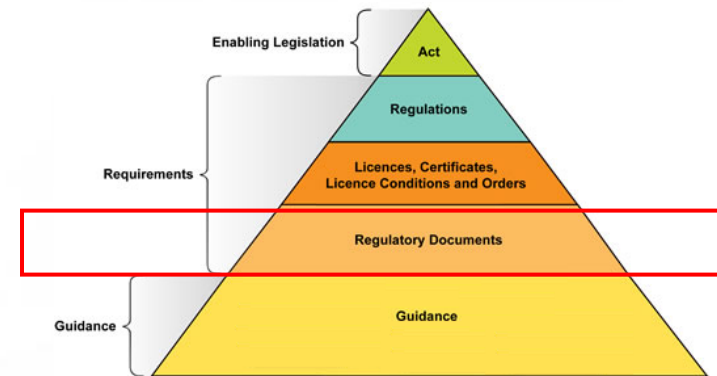
- *Occupational Health & Safety Act and regulations*
- *Environmental Protection Act and regulations*
- *Ontario Regulation 213/91 Construction Projects*
- *Ontario Regulation 854/90 Mines and Mining Plants*
- *Ontario Regulation 851/90 Industrial Establishments*

Plus other codes and standards

CNSC Licensing Process

Regulatory Documents

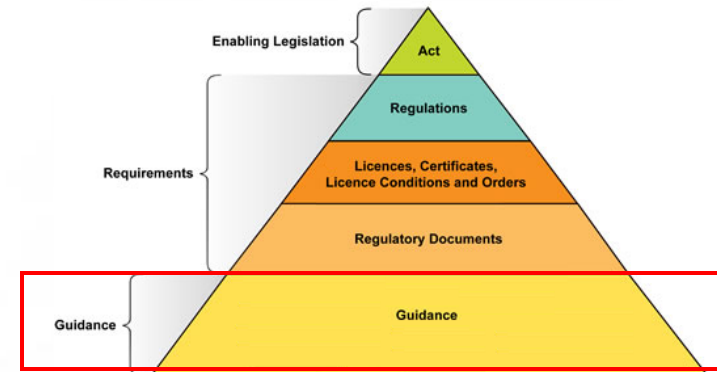
- Provide detail and clarification of the licensing and other regulatory requirements of the Commission with respect to the NSCA, regulations and licence conditions
- DGR Project Example
 - CNSC's S-296, Environmental Protection Policies, Programs and Procedures at Class I Nuclear Facilities and Uranium Mines and Mills, March 2006



CNSC Licensing Process

Guidance Documents

- Practical, non-mandatory, direction how to meet licensing and other regulatory requirements of Commission
- DGR Project Examples
 - CNSC's G-320, Assessing the Long-term Safety of Radioactive Waste Management, December 2006
 - CNSC's P-290, Managing Radioactive Waste, July 2004
 - Uranium Mines and Mills Regulations SOR/2000-206, June 2009 (guidance only)



CNSC Licensing Process

CNSC Licence

- Phased to address entire life cycle
- Contain terms and conditions
- CNSC Staff's Commission Member Document (CMD) recommendations will be captured in the proposed licence

CNSC Licensing Process

Licence Condition Handbook (LCH)

- Outlines CNSC expectations
- Contains compliance verification details for each licence condition
 - Compliance Verification Activities
 - Reporting Requirements
- Can be updated over time as required

CNSC Licensing Process

- The Licence and LCH map regulatory requirements against CNSC's Technical Assessment Framework

Safety and Control Areas

- Management System
- Human Performance Management
- Operating Performance
- Safety Analysis
- Physical Design
- Fitness for Service
- Radiation Protection
- Conventional Health and Safety
- Environmental Protection
- Emergency Management and Fire Protection
- Waste Management
- Security
- Safeguards
- Packaging and Transport

Other Areas

- Financial Guarantees
- Consultations and Communications

CNSC Licensing Process

- Licensees are also obligated to adhere to other safety codes and standards as well as applicant commitments once referenced in a licence or LCH

Buildings and Structures

- National Building Code (2005)

Fire Protection System

- National Fire Code (2005)

Ventilation System

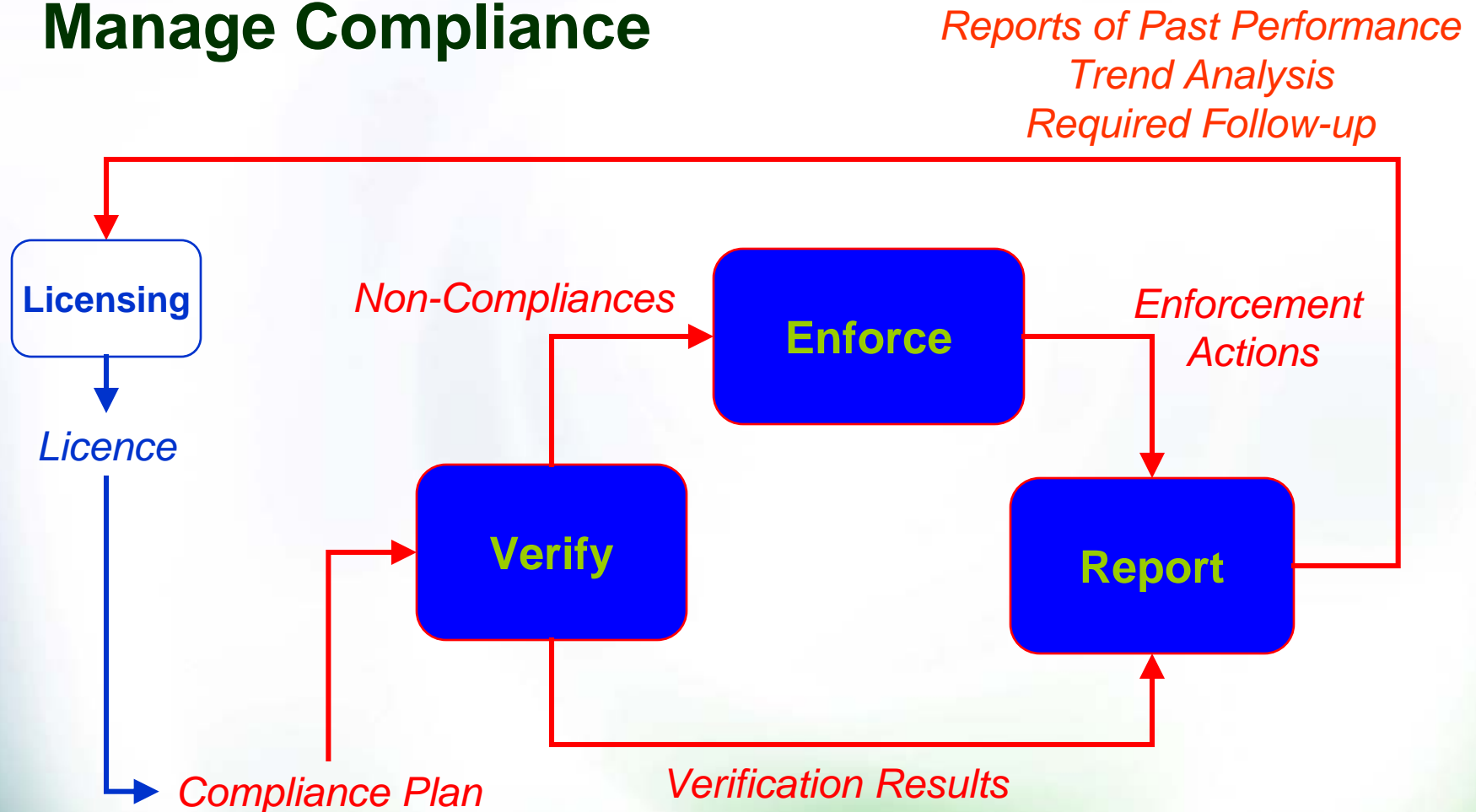
- Ontario Regulation 854/90, Mines and Mining Plants

Environmental Protection

- Activities associated with site preparation and construction shall meet all applicable federal and provincial environmental protection laws and regulations

CNSC Compliance Process

Manage Compliance



CNSC Compliance Process

Verify Compliance

- Review licensee operational information and documentation
- Conduct inspections
- Investigate unplanned events or incidents
- Compliance verification will mesh with key project sequencing milestones

CNSC Compliance Process

Inspections

- Inspection scope, location and frequency are risk-informed
- Inspections include:
 - “Snapshot” inspections focused on immediate observations
 - Investigation following an event or incident
 - Detailed evaluation consisting of document review, site inspections and interviews

CNSC Compliance Process

Reporting Compliance

- **Licensee reporting includes:**
 - Annual reporting
 - Milestone reporting at key project phases
 - Outcome of self-assessments
 - EA Follow-Up Monitoring Program:
 - Surface Water
 - Effluent Releases
 - Groundwater
 - Monitor Terrestrial Species and Habitats
 - Geoscientific Verification Plan
 - Air Quality
 - Noise
 - Socio-economic Studies
 - Aboriginal Interests
 - Incidences and significant developments

CNSC Compliance Process

Proposed Activities During Licence Period

- **OPG compliance activities include:**

- Reporting to demonstrate adherence to licence conditions
- Self-assessment of licensed programs
- Geoscientific verification activities
- EA Follow-Up Monitoring Program
- Develop and document necessary requirements to operate

- **CNSC compliance activities include:**

- Conduct inspections and evaluate licensee reporting to determine if licence requirements are being met

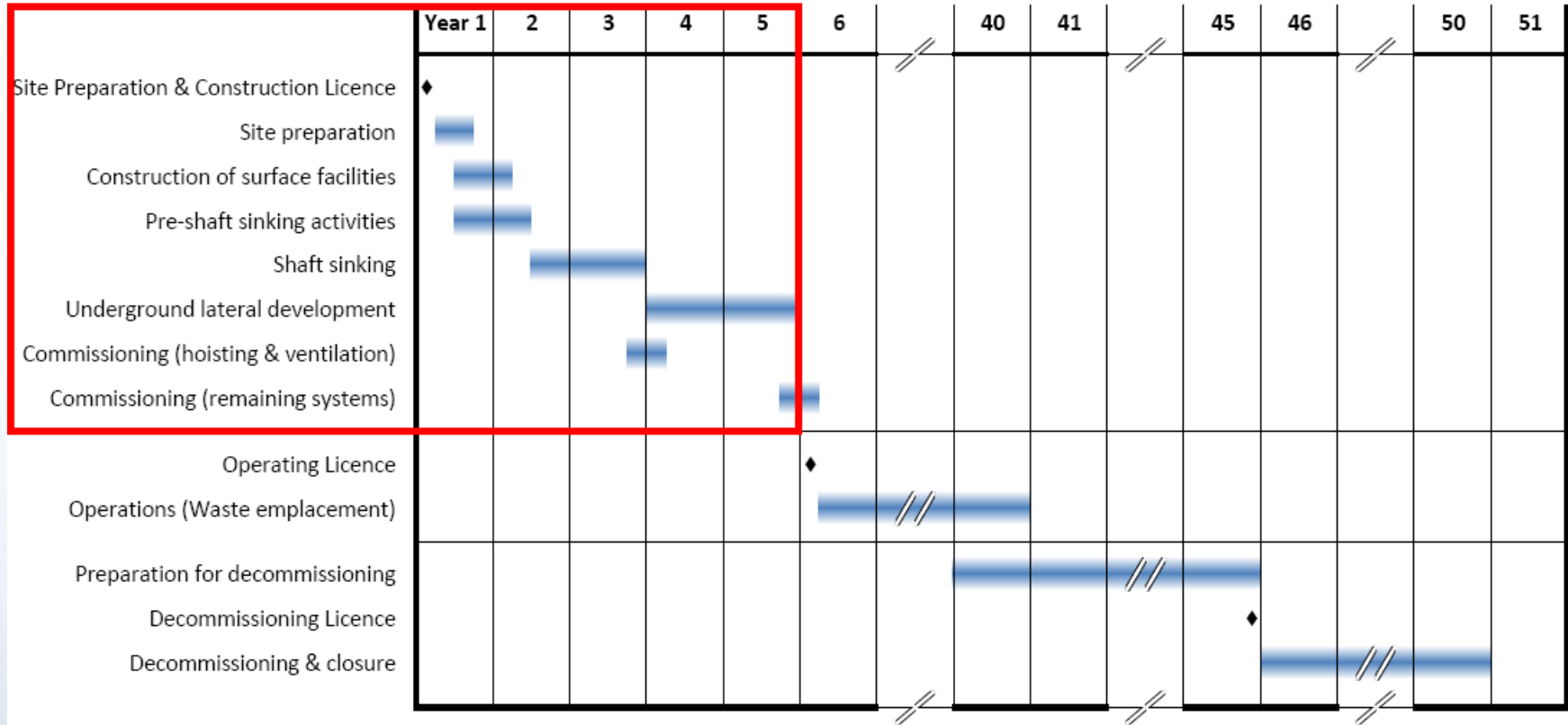
CNSC Compliance Process

Enforcing Compliance

- Uses a graded approach to select an appropriate enforcement tool to correct non-compliances
 - Recommend/suggest potential improvement
 - Request actions be taken
 - Issue request and/or an Order
 - Refer to the Commission
 - Suspend licensed activities
- Examines the risks associated with non-compliances found during verification activities
- Applies enforcement tool and tracks enforcement action

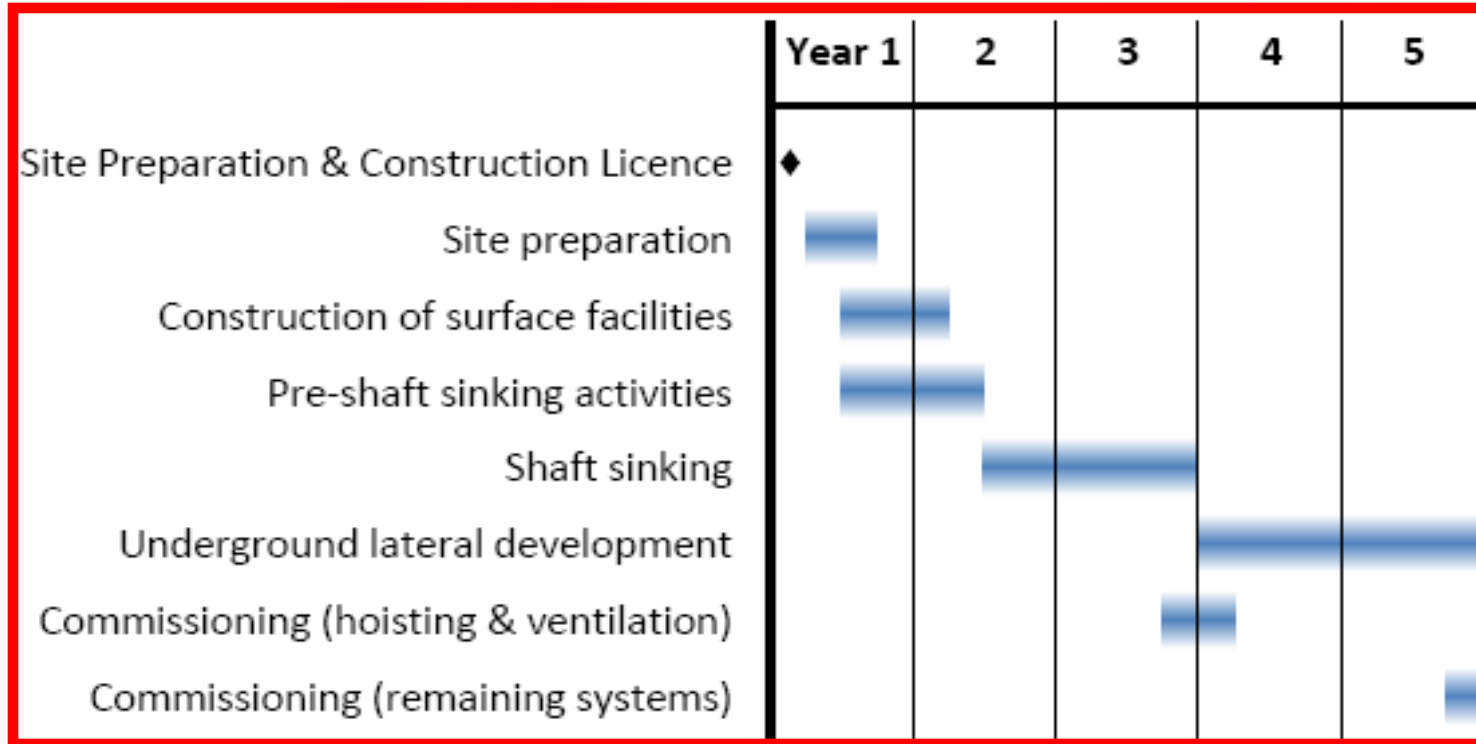
Project Sequencing

OPG's DGR for L&ILW - Project Lifecycle Schedule



Proposed licensed activities limited to site preparation and construction

Project Sequencing



Major project milestones can be verification points during licensing

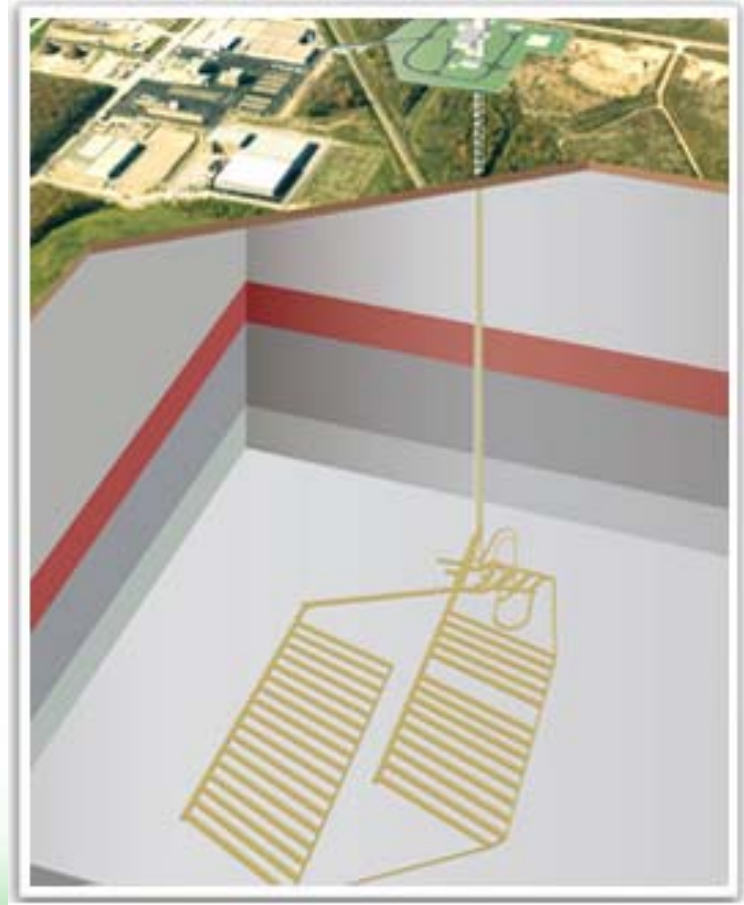
Project Sequencing

Site Preparation Phase

- Site access (roadways and laydown areas)
- Infrastructure (services/utilities)
- Stormwater management
- Waste rock management

Construction Phase

- Sinking of main shaft & ventilation shaft
 - Excavation through overburden and collar installation
 - Shaft sinking to full depth and sealing
- Underground lateral development
 - Underground services area
 - Access tunnels
 - Emplacement rooms



CNSC Staff's Next Steps

During Public Review Period

- Continue our evaluation of OPG's DGR Project application
- Upon request, will provide the JRP technical advice/clarification

In Advance of JRP Hearing

- Provide to the JRP:
 - Staff's evaluation of OPG's application for a site preparation and construction licence
 - Staff's licensing recommendation
 - Draft licence and LCH



Canadian Nuclear
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