

Modernizing the Regulatory Framework for Advanced Reactor Siting

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Introduction

- NRC mission
- Traditional regulatory framework
- Purposes of NRC siting review
- Regulatory framework modernization efforts
- Opportunities for stakeholder participation

Nuclear Regulatory Commission

- Created in 1974
- Independent Executive Branch Agency
- Mission
 - *to license and regulate civilian use of radioactive materials to provide reasonable assurance of adequate protection of public health and safety, to promote the common defense and security, and to protect the environment.*

<https://www.nrc.gov/about-nrc.html>

Regulatory Framework – Siting

- Legislation
 - Atomic Energy Act
 - National Environmental Policy Act (and others)
- Regulations
 - Title 10, *Code of Federal Regulations*
(Parts 50, 51, 52, and 100)

<https://www.nrc.gov/about-nrc/regulatory.html>

<https://www.nrc.gov/reactors/new-reactors.html>

<https://www.nrc.gov/about-nrc/regulatory/licensing/nepa.html>

Purposes of Siting Review

Safety & Security

- Natural and man-made hazards to plant
 - Seismic
 - Flooding
 - Hurricanes/Tornados
 - Infrastructure (rails lines, pipelines, facilities)
- Security
- Emergency planning

Purposes of Siting Review

Environmental

- Project purpose and need
- Impacts to natural and human environment
 - Water quality
 - Ecology
 - Human health
 - Socioeconomic
 - Historic and cultural resources
 - Fuel cycle & waste
 - Others...
- Alternatives

Advanced Reactor Licensing Modernization

- Policy Statement (1986, 2008)
- Readiness Assessment (2001)
- Vision & Strategy (2016)
- Implementation Action Plan (2017)
- Program Status Reports (latest – 2021)

<https://www.nrc.gov/reactors/new-reactors/advanced/policy-issues.html>

<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#visionstrat>

Licensing Modernization

Siting Review – Safety & Security

- New 10 CFR Part 53
- Emergency Preparedness
- Physical Security

<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#part53>

<https://www.regulations.gov/docket/NRC-2015-0225/document>

<https://www.regulations.gov/docket/NRC-2017-0227/document>

Licensing Modernization Siting Review – Environmental

- Interim Staff Guidance
 - COL/ESP-ISG-027, Light Water SMRs
 - COL/ESP-ISG-029, Micro-reactors
- Generic Environmental Impact Statement
- 10 CFR Part 51

<https://www.nrc.gov/reading-rm/doc-collections/isg/col-app-design-cert.html>

<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#advRxGEIS>

Stakeholder Engagement

- Rulemaking public comments
- Advanced reactor stakeholder meetings
- Part 53 rulemaking meetings

<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#stakeholder>

<https://www.nrc.gov/pmns/mtg>

Conclusion

- Detailed siting reviews for power reactor license applications
- Modernizing regulatory framework for advanced nuclear reactors
- Stakeholder feedback is encouraged
- Continue to ensure our core mission to protect public health and safety and the environment

<https://www.nrc.gov/reactors/new-reactors/advanced.html>