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Licensing Processes and Procedures Workshop

Feb. 4, 2010

Wesley Held

Advanced Reactor Program

Office of New Reactors

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NRC Fees

Renu Suri, Acting Branch Chief,
Accounts Receivable Branch,
Division of Controller,

Office of Chief Financial Officer

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WHY NRC FEES

- **Following Laws Require NRC to Collect Fees**
- **Omnibus Budget Reconciliation Act (OBRA-90), as Amended**
  - **NRC is Required to Recover Approximately 90 Percent of Its Budget**
  - **Annual Charges Reflect the Budgeted Costs of Providing Services to Licensees or Classes of Licensees**
  - **NRC Recovers Through Annual Fees the Budget Not Recovered Through Fees for Services under IOAA**
- **Independent Offices Appropriation Act (IOAA)**
  - **NRC is Authorized to Charge Fees for Services**
  - **Fee is Billed as Hours Expended Times NRC Professional Hourly Rate**

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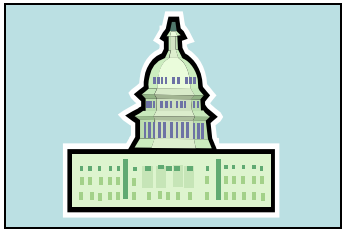
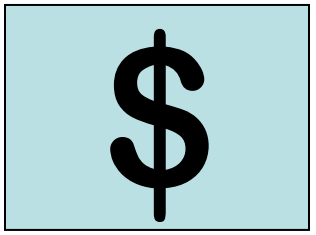
ANNUAL FEE CYCLE

Congress



Treasury



Congress Gives NRC Its Budget

Establishes Laws About Fee Collection

NRC Sends Fee Collections to Treasury

NRC

NRC Applicants and Licensees

NRC Assesses and Collects Fees

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NRC Appropriation

- Federal Government Operates on a Fiscal Year (FY) Schedule: October 1 through September 30
- Budget Available for NRC Use is Appropriated by Congress
- Fees do not directly affect amount of funds available to NRC
- Fees Collected are Provided to Treasury to Offset Amount Appropriated to NRC
  - If fees collected exceed the required 90%, current policy applies the over collection as a carryover to reduce the Fee Recovery amount for the next FY

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FY 2009 Fee Recovery Amount
(Dollars in Millions)

- Total Budget Authority: **$1,045.5**
- Less Non-Fee Items **($78.1)**
  - Nuclear Waste Fund (NWF) $49.0
  - Waste Incidental to Reprocessing (WIR) $2.0
  - Generic Homeland Security $27.1
- Equals Fee Base: **$967.4**
- Times Fee Recovery Rate: **90%**
- Equals Fee Recovery Amount: **$870.6**

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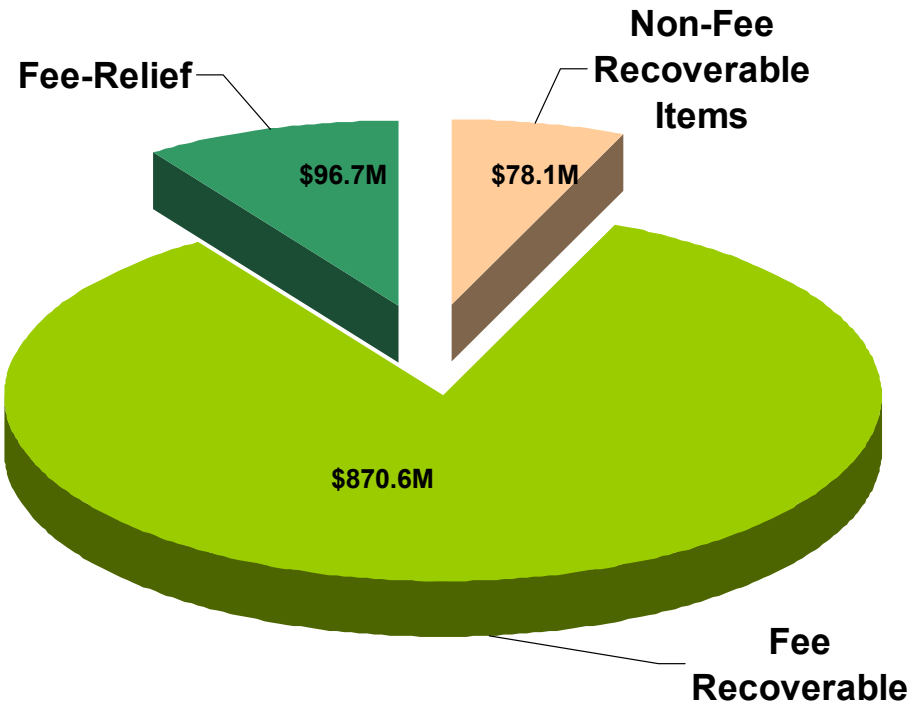
FY 2009 Appropriation
[Dollars in Millions]



Total NRC Appropriation: $1,045.5M

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FEE RULEMAKING

- **NRC Establishes Fees Through Notice and Comment Each Year**
  - **Proposed Rule Is Published and Public Comments Requested**
  - **NRC Considers Comments and Then Issues Final Rule**
- **Fee Rule Includes:**
  - **Annual Fees to Recover All Other Costs (under 10 CFR Part 171)**
  - **Hourly Rates to Assess Fees for Services (under 10 CFR Part 170)**
- **New Fees Apply When Final Rule Takes Effect**

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10 CFR 170 FEES

- **Assessed to Identifiable Recipients of Special Benefits**
  e.g. Review of New Reactor Application, Reactor Inspections

- **Types of 10 CFR 170 Fees**

  - Full - Cost Fees
  Based On The Actual NRC Professional Technical Staff Hours Times NRC Hourly Rate Plus Any Contractual Services Costs
  (10 CFR 170.21 & 170.31)

  - Flat Fees
  For Applicants Who File For New Materials Licenses,
  (10 CFR 170.31)

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10 CFR 171 FEES

- **Assessed To All NRC Licensees As Annual Fee**
- **Annual Fee Recovers The Remainder Of The Budgeted Costs Subject To Fee Recovery Which is Not Assessed Under 10 CFR Part 170**
- **10 CFR 171.15 For Reactor Licenses and 10 CFR 171.16 For Materials Licenses**

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NRC HOURLY RATE

- **Calculated as**

$$\frac{\text{Budgeted Resources}}{\text{Mission Direct FTE Hours}} = \text{Hourly Rate}$$

- **FY 2009 Hourly Rate Is $257 per hour**

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EXAMPLES OF FY 2009 PART 171 ANNUAL FEES

Type of License	Fee
Operating Power Reactor	$4,503,000
Spent Fuel Storage/ Reactors in Decommissioning	$122,000
Nonpower Reactor	$87,600
High Enriched Uranium Fuel Facility	$4,691,000
Low Enriched Uranium Fuel Facility	$1,649,000
Basic In Situ Recovery Facility	$29,700

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Information Resources

- 10 CFR Part 170 and 10 CFR Part 171
  http://www.nrc.gov/reading-rm/doc-collections/cfr/

- FY 2009 Fee Rule, Docket No. NRC-2008-0620
  http://www.regulations.gov
  - Final Fee Rule (74 FR 27642; June 10, 2009)
  - Proposed Fee Rule (74 FR 9129; March 2, 2009)
  - Public Comments

- FY 2009 Final Fee Rule Work Papers
  (ADAMS Accession ML091490108)

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ASSESSING FEES

- **Fees for Services**
  - **NRC Tracks Hours Expended for Services Provided to Licensees**
  - **NRC Bills Full Cost Fees Based on Hours Expended Times the Hourly Rate**
  - **Licensees Are Billed for Services Each Quarter**
- **Annual Fees**
  - **Smaller Annual Fees (less than $100,000) Billed Once a Year**
  - **Annual Fees of $100,000 or More Billed Each Quarter**
  - **Partial Year Licenses Assessed Prorated Fees**

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COLLECTING FEES

- **Bills Mailed for Part 170 Fees for Services and Part 171 Annual Fees**
  - **Payment is Due Within 30 Days of Bill Date (First Notice)**
  - **Second Notice (with Interest and Penalty) Sent 30 Days After Initial Bill**
- **License Revoked if Payment is Not Received Within Approximately 90 Days**
- **Delinquent Debts Referred to Treasury for Collection**
- **Fees Collected Sent to the Treasury Each Quarter**

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Questions?

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Quality Assurance

Juan Peralta, Chief
Quality and Vendor Branch 1,
Division of Construction Inspection and Operational Programs,
Office of New Reactors

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Overview

- Regulatory framework
- Guidance documents
- Oversight activities

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Regulatory Framework

- Appendix B to 10 CFR Part 50 (Quality Assurance)
- 10 CFR Part 21 (Reporting of defects and noncompliance)
- Quality Assurance Topical Report

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Guidance Documents

- NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants"
  - Chapter 17.5, "Quality Assurance Program Description - Design Certification, Early Site Permit and New License Applicants"

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Guidance Documents (cont'd)

- Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants"
- Regulatory Guide 1.28, "Quality Assurance Program Requirements (Design and Construction)"
- Nuclear Energy Institute (NEI), NEI 06-14, "Quality Assurance Program Description"

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Oversight Activities

- QA Implementation
- Design certification testing

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Questions

Overview of Current NRC Emergency Preparedness Program

Holly Phillips Hall
EP Specialist
Office of Nuclear Security and Incident Response

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What is the overall objective of Emergency Preparedness?

- To ensure that the nuclear power plant operator is capable of *implementing adequate measures* to protect public health and safety in the event of a radiological emergency

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Why Prepare?

- Prudence
  - to prepare for a radiological release, regardless of how unlikely it may be
- Planning
  - to have a strategy (with supporting infrastructure) in place to be activated during an event
- Training and practice
  - to maintain the human expertise needed to conduct a well organized response

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Protecting Public Health and Safety

- What strategies do we utilize?
  - Emergency Planning Zones
  - Emergency Plans
  - Emergency Action Levels
- What tools are available?
  - Facilities
  - Equipment
  - People

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Regulations and Guidance

- "Reasonable Assurance" finding needed prior to issuing License
- 10 CFR 50.47a
  - *no initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.*

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Onsite Emergency Preparedness

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Offsite Emergency Preparedness

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Regulations and Guidance

10 CFR 50.47(b)

- 16 Emergency Planning Standards
  - A high-level set of standards to be applied to emergency planning
    - Further detail on how to practically apply the planning standards is contained in Appendix E and NUREG 0654
  - Must be met in licensee and State and local emergency plans

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Regulations and Guidance

10 CFR 50 Appendix E

- "Emergency Planning and Preparedness for Production and Utilization Facilities"
- Contains the requirements for emergency plans that support the 16 planning standards found in 10 CFR 50.47(b)
- Licensee requirements only

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Regulations and Guidance

NUREG-0654/FEMA-REP-1

- "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants"
- Product of a joint NRC/FEMA Steering Committee
- Guidance and criteria for satisfying 10 CFR 50.47(b) and Appendix E

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Emergency Planning Zone

- 10 CFR 50.47 (c)(2) Plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius
- EPZ size may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal.

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EP Rulemaking

- Coordinated with FEMA to propose enhancements to the current EP regulations and guidance
- www.regulations.gov, Docket Number NRC-2008-0122

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Additional Information

- The Sixteen Planning Standards
  - 10 CFR 50.47(b)1 – 10 CFR 50.47(b)16

- A plain language version of the planning standards will be available in the presentation materials attached to the meeting summary

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Questions?

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Physical Protection Requirements for New Reactors

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Division of Security Policy

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Regulatory Requirements

- Subpart B,10 CFR 52.47 - requires that information submitted for a design certification must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant.

- 10 CFR 52.48 - requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73, “Physical Protection of Plants and Materials.”

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Regulatory Requirements

- Subpart C, 10 CFR 52.79(a)(35)(i) and (ii), and § 52.79(a)(36)(i) through (iv) - require that information submitted for combined license (COL) describe how the applicant will meet the requirements of 10 CFR 73, Physical Protection of Plants and Material; provide a description of the implementation of the physical security plan, a safeguards contingency plan in accordance with appendix C of 10 CFR Part 73; provide a training and qualification plan in accordance with appendix B of 10 CFR Part 73.

- Subpart C, 10 CFR52.79(a)(44) - requires a description of the fitness-for-duty program required by 10 CFR Part 26, Fitness for Duty Program, and its implementation.

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Regulatory Requirements

- 10 CFR Part 73 - includes performance-based and prescriptive regulatory requirements that, when adequately met and implemented provide protection of nuclear power reactors against acts of radiological sabotage, prevent the theft or diversion of special nuclear material, and protect safeguards information against unauthorized release.

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Regulatory Requirements

- 10 CFR 73.55(b) - requires that the applicant "shall establish and maintain an onsite physical protection system and security organization which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety."

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Regulatory Requirements

- 10 CFR 73.55(b)(2) - requires a licensee [the COL applicant] to provide [demonstrate] a high assurance of protection against the DBT of radiological sabotage. A COL applicant must describe as stated how it intends to meet the requirements of 10 CFR 73.55(b)(2) by establishing a physical protection program and organization that must protect against the design basis threat of radiological sabotage.

- 10 CFR 73.55(3) – requires assurance of capabilities to detect, assess, interdict, and neutralize (i.e., design of a physical protection system) threats up to and including the design basis threat of radiological sabotage.

- 10 CFR 73.55(3)(ii) – requires defense-in-depth for the physical protection.

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Regulatory Requirements

- The following are specific sections of 10 CFR Part 73.55:
  - 10 CFR 73.55(b)(1) through (b)(11), General performance objectives and requirements
  - 10 CFR 73.55(c)(i) through (c)(iv). “Security plans”
  - 10 CFR 73.55(d)(1) through (d)(3), “Security organization”
  - 10 CFR 73.55(e)(1) through (10), “Physical barriers”
  - 10 CFR 73.55(f)(1) through (f)(4), “Target sets”
  - 10 CFR 73.55(g)(1) through (g)(8), “Access controls”
  - 10 CFR 73.55(h)(1) through (h)(3), “Search program”
  - 10 CFR 73.55(i)(1) through (i)(6), “Detection and assessment systems”
  - 10 CFR 73.55(j)(1) through (j)(6), “Communications Requirements”
  - 10 CFR 73.55(k)(1) through (k)(8), “Response requirements”
  - 10 CFR 73.55(m)(1) through (m)(4), “Security program reviews”
  - 10 CFR 73.55(n)(1) through (n)(8), “Maintenance, testing, and calibration”
  - 10 CFR 73.55(o)(1) through (o)(3), “Compensatory measures”
  - 10 CFR 73.55(p)(1) through (p)(4), “Suspension of security measures”
  - 10 CFR 73.55(q), “Records”

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Regulatory Requirements (continued)

- 10 CFR 73.55(l)(1) through (l)(7), “Facilities using mixed-oxide (MOX) fuel assemblies containing up to 20 weigh percent plutonium oxide,” is applicant only to applicant that plans to use MOX fuel assemblies.

- 10 CFR 73.55(r)(1) through (r)(4), “Alternative measures” is applicable only if an applicant plans to provide a measure for protection against radiological sabotage other than one required by 10 CFR 73.

- 10 CFR Part 73.21, “Protection of Safety Information: Performance Requirements”

- 10 CFR Part 73.54, “Protection of digital computer and communication systems and net works”

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Regulatory Requirements (continued)

- 10 CFR Part 73.56, “Personnel access authorization requirements for nuclear power plants”
- 10 CFR Part 73.58, “Safety/security interface requirements for nuclear power reactors.”
- Appendix B to Part 73, “General Criteria for Security Personnel”
- Appendix C to Part 73, “Nuclear power Plant Safeguards Contingency Plan
- 10 CFR Part 26 “Fitness for Duty Programs”
- 10 CFR Part 100.21 (f) “Non-Seismic Siting Criteria” *{Note: Title 10 CFR 100.21(f) requires that site characteristics must be such that adequate security plans and measures can be developed. }*

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Regulatory Requirements

- A COL applicant may incorporate by reference a certified design in meeting various requirements of 10 CFR 73.55. However, the standard design of physical protection systems is limited to the scope of the design certification and the COL applicant must provide the remaining and complete the descriptions of a physical protection system, along with security programs, organization, and processes, for meeting all requirements of 10 CFR 73.55.

- 10 CFR 74 - “Material Control and Accounting of Special Nuclear Material,” establishes requirements for the control and accounting of special nuclear material at fixed sites and for documenting, transfer, and reporting on special nuclear material (e.g., low, moderate, and formula SNM, etc.). Current regulation may not specifically address advanced technologies.

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Regulatory Requirements

- 10 CFR 52.47 - requires that the application will contain a final safety analysis report (FSAR) that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components and of the facility as a whole.

- 10 CFR 52.6 – requires that the information provided to the Commission by the applicant must be complete and accurate and the applicant will notify the Commission of information that the applicant, licensee, or holder has been identified as having a significant implication for public health and safety or common defense and security.

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Regulatory References

- RG 5.7, “Entry/Exit Control for Protected Areas, Vital Areas, and Material Access Areas,” Revision 1, May 1980.
- RG 5.12, “General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials,” November 1973.
- RG 5.44, “Perimeter Intrusion Alarm Systems,” Revision 3, October 1997.
- RG 5.54, Safeguards Contingency Plan, July 2009.
- RG 5.65, “Vital Area Access Controls, Protection of Physical Protection System Equipment and Key and Lock Controls,” September 1986.
- RG 5.66, “Access Authorization Program for Nuclear Power Plant, July 2009

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Regulatory References

- RG 5.69, “Guidance for the Application of Radiological Sabotage Design Basis Threat in the Design, Development, and Implementation of a Physical Security Protection Program that Meets 10 CFR 73.55 Requirements,” June 2006.
- RG 5.71, Cyber Security Programs for Nuclear Facilities, January 2010.
- RG 5.74, “Managing the Safety/Security Interface,” March 2009.
- RG 5.75, “Training and Qualification of Security Personnel at Nuclear Power Reactor Facilities,” June 2009.

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Regulatory References

- RG 5.76, “Physical Protection Programs at Nuclear Power Reactors,” July 2009.
- RG 5.77, “Insider Mitigation Program (IMP),” July 2009.
- RG 1.215, “Imminent Aircraft Attack, July 2009.
- RG 1.206, “Combined License Applications for Nuclear Power Plans (LWR Edition), June 2007.

Note: Regulatory guides are not substitutes for regulations, and compliance with them is not required.

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Guidance Being Revised/Developed

- DG 5023 (RG 5.68), “Protection Against Malevolent use of a Vehicle at Nuclear Power Plants”
- DG 5024, “Mixed Oxide Fuel”
- DG 5025, “Physical Security Hardware, Inspections, Testing, Analysis, and Acceptance Criteria (ITAAC)”
- DG 5027 (RG 5.12, and 5.65), “General Use of Locks In the Protection and Control of Facilities and Special Nuclear Materials.”
- DG 5031 (RG 5.44), “Intrusion Detection Systems and Subsystems”
- DG 5032 (RG 5.7), “Entry/Exit Control for Protected Areas, Vital Areas, and Material Access Areas”

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Staff Guidance

- The relevant requirements of the NRC regulations for this area of review, and the associated guidance and acceptance criteria, are given in following sections of the NUREG-0800:

  – SRP 13.6, Physical Security
  – SRP 13.6.1, Physical Security – Combined License
  – SRP 13.6.2, Physical Security – Design Certification
  – SRP 13.6.3, Physical Security – Early Site Permit
  – SRP 14.3.12, Physical Security – Inspections, Tests, Analyses, and Acceptance Criteria

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Other References for Designing and Evaluating Physical Protection Systems

- NUREG/CR-1345, Nuclear Power Plant Concepts for Sabotage Protection
- NUREG/CR-4250, Vehicle Barriers: Emphasis on Natural Features
- NUREG/CR-6190, Protection Against Malevolent Use of Vehicles at Nuclear Power Plants

Note: NUREGs and other technical reports are not Regulatory Guides and should not be used as acceptable methods for meeting regulatory requirements.

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Industry Guidance

- NEI 03-01, Nuclear Power Plant Access Authorization Program, Revision 1, July 2009.

- NEI 03-12, Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, Revision 6, February 2009.

Note: Industry guidance not accepted by the NRC or guidance related to inspections activities are not and should not be used as methods that are acceptable for meeting regulatory and licensing requirements.

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Operator Licensing for New Reactors

Jim Kellum, Sr. Reactor Operations Eng.

Operator Licensing & Human Performance Branch

Office of New Reactors

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Uh-oh

The plant is built and we don't have any licensed operators.

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- Effective operator training and licensing are critical to ensure an adequate number of licensed operators are available to meet new reactor operating schedules.

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Operator Licensing and Fuel Load

- Must have licensed operators to load fuel into the reactor vessel.
- 10 CFR 55 contains requirements to issue, maintain, and renew operator licenses.
- Operator licensing exams require a plant-referenced simulator.
- Simulator certification requires a complete control room design (including human factors review).

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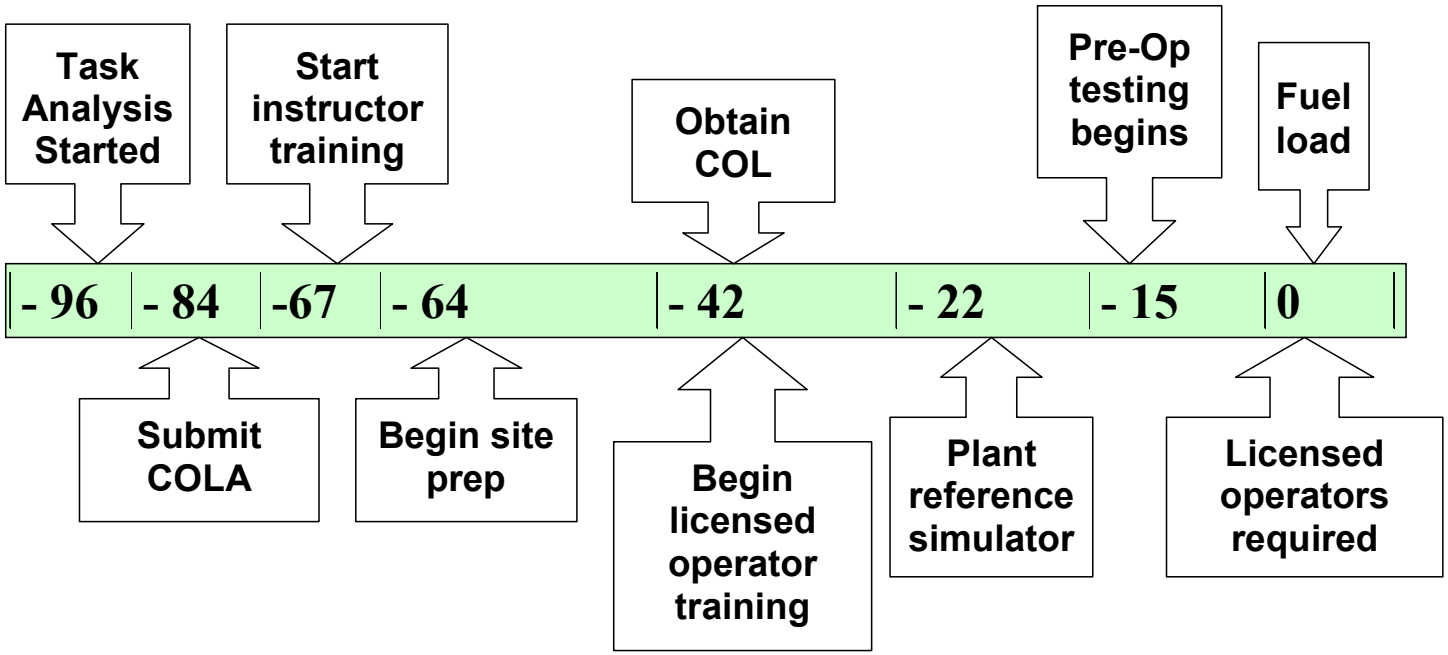
Coordination of NRC Reviews and Examinations

Training & Initial Accreditation Timeline (Months)



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Operator Licensing Process

- Consistent method for acquiring knowledge and experience required for licensed operator duties post construction
- NEI 06-13A, Rev. 1, 'Template for an Industry Training Program Description', includes Cold Licensing Training Plan

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Developing Knowledge and Abilities (K & A) Catalogs

- Control room function and task analysis
- Identify required operator knowledge and abilities
- K & A Catalogs are the basis for NRC exams

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Environmental Reviews

Barry Zalcman
Division of Site and Environmental Reviews
Office of New Reactors

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Learning Objectives

- Understand the basis for performing environmental reviews
- Understand the purpose of performing environmental reviews
- Understand the decision-making model for Environmental Impact Statements

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General Information – NEPA and the NRC

- National Environmental Policy Act (NEPA)
  - Applies to all Federal agencies, including the NRC, but not to NRC applicants
  - Open process allowing for meaningful stakeholder and public participation
- NEPA is part of the myriad of statutes, Presidential executive orders, and regulations aimed at making informed decisions and protecting the environment
- NRC framework for implementing NEPA practices is 10 CFR Part 51
  - Regulatory Guidance is in R.G. 1.206, R.G. 4.2, R.G. 4.7 and NUREG-1555 (ESRP)
  - Focused on impacts from, alternatives to, and benefits assessment of proposal
- NRC considers environmental values in its safety decisions
- Protection of the environment under other statutes (Clean Air Act, Clean Water Act, etc.) is generally left to other agencies (USACE, USEPA, etc.) or the States

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General Information – Applicant Request for Action

§ 51.41, 51.45, 51.50, 51.55 Requires that applicant provide information to assist the Commission in complying with section 102(2) of NEPA. This includes the preparation of an Environmental Report (ER) for a variety of licensing actions (ESP, COL, DC, LWA, etc.).

Unlike the safety review, where the principal licensing basis document is the applicant's Safety Analysis Report, for the environmental review, the principal licensing basis document is the NRC's Environmental Impact Statement (EIS); the ER is the starting point for the staff's review.

§ 51.70 Requires staff to independently evaluate and be responsible for reliability of all information used in its EIS. Staff will scrutinize information provided on the docket and during its audits and review. NRC will develop its own sources of information, if needed.

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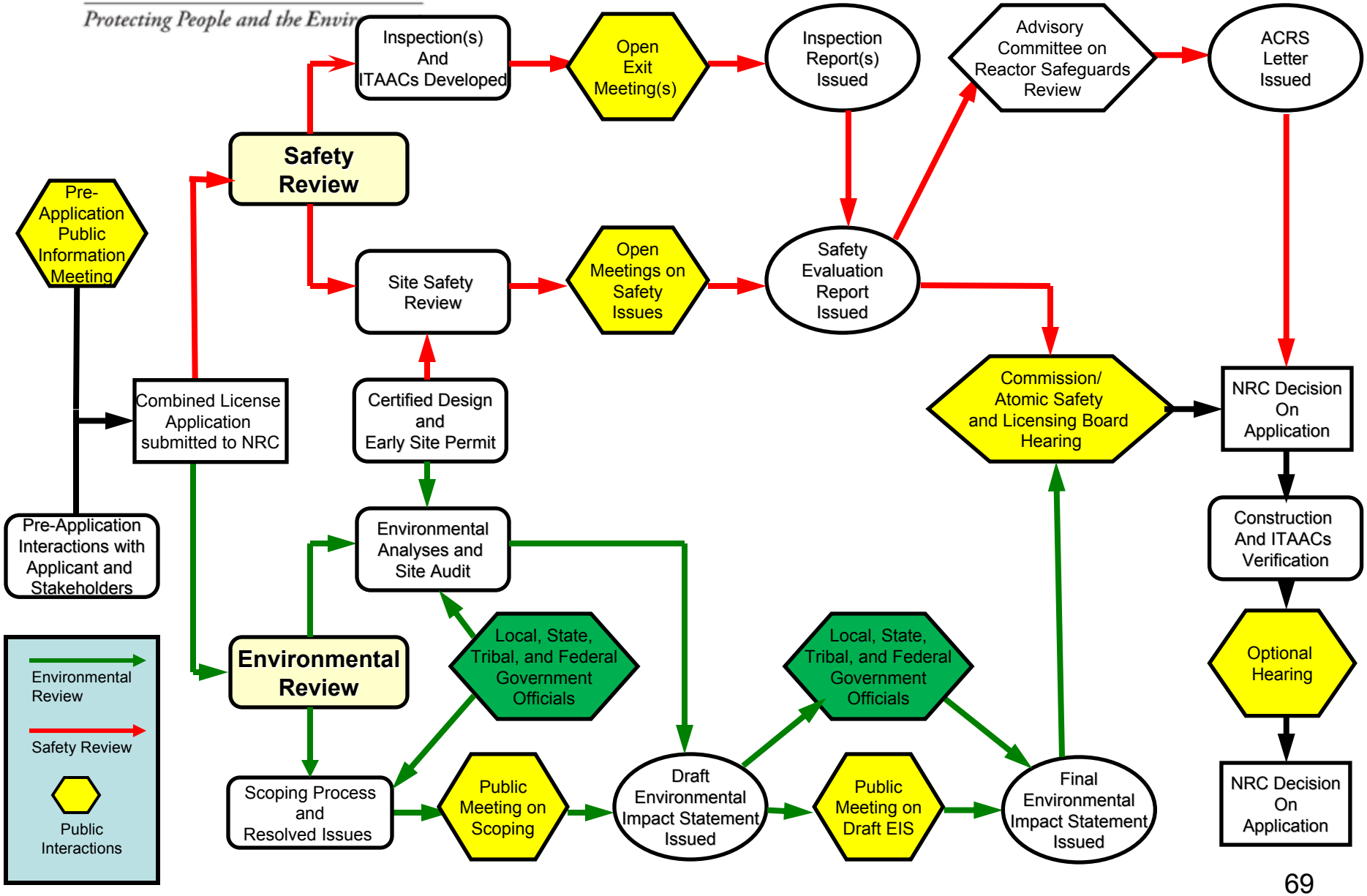
Combined License Process



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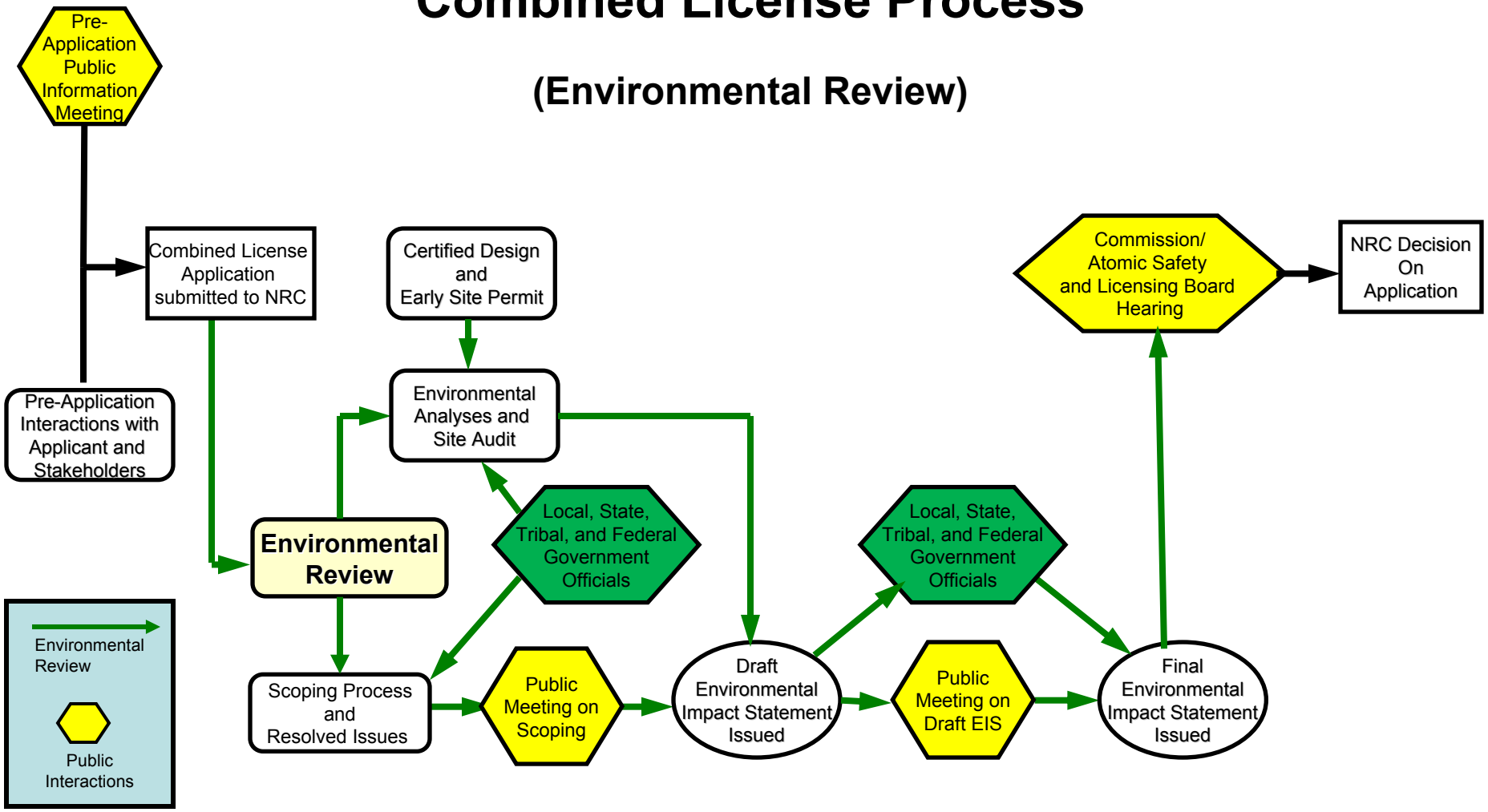
Combined License Process

(Environmental Review)



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Siting Activities Include Environmental Reviews

LOOKING INWARD **- NRC considers site safety factors as part of its Atomic Energy Act responsibilities by evaluating the design of the facility to protect against natural phenomena (i.e., environmental factors that affect the design such as earthquakes, floods, tornado-generated missiles, etc.), consequences of postulated accidents and other hazards, and emergency and security planning**

LOOKING OUTWARD **- NRC considers environmental values as part of its National Environmental Policy Act responsibilities by evaluating the facility impacts on the human environment (i.e., construction and operational demands and releases such as water use and quality, socioeconomics, terrestrial and aquatic species, routine and accidental releases, etc.)**

SITING **includes Site Safety, Emergency Preparedness, and Environmental Protection Issues.**

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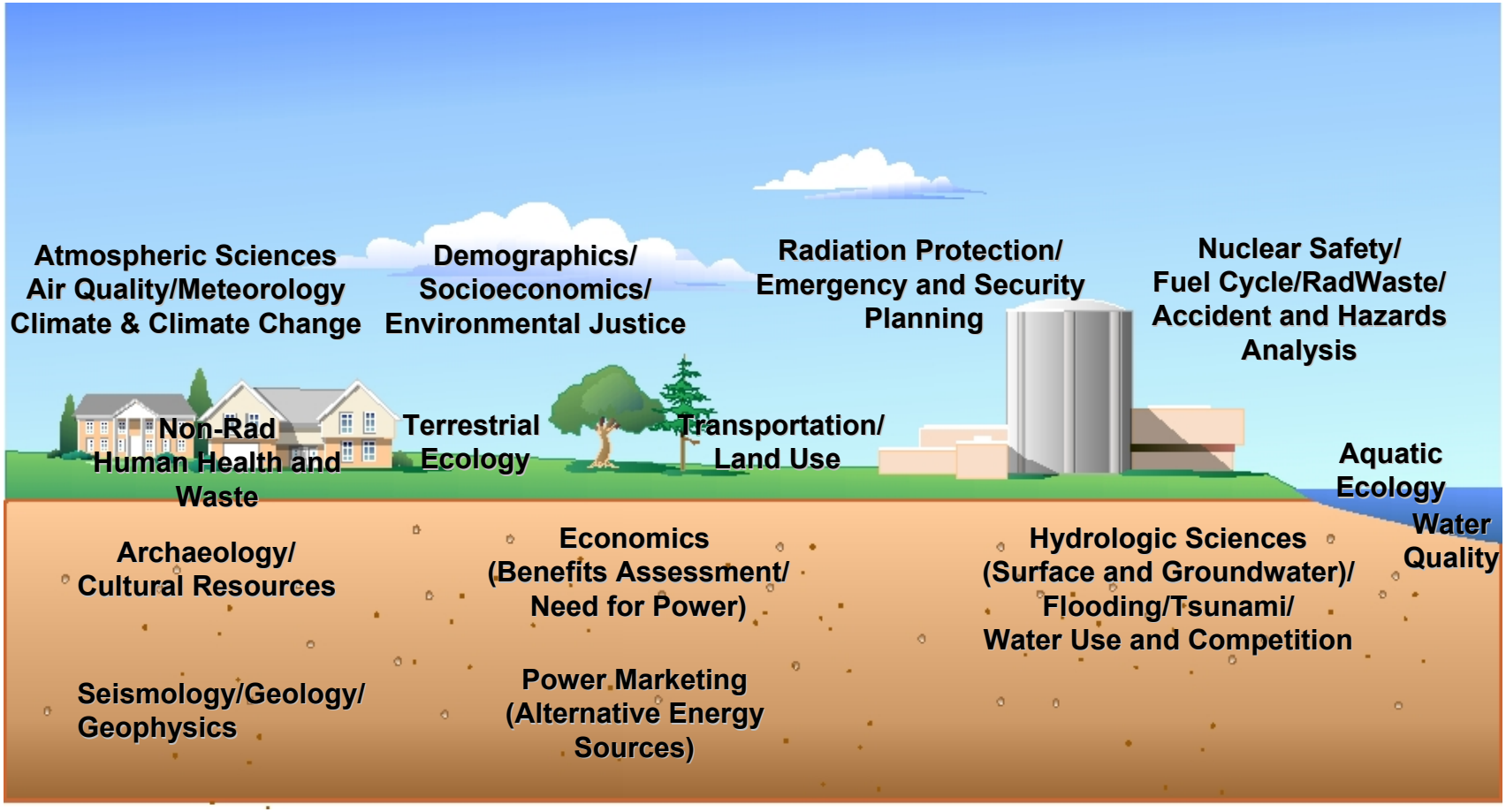
Siting Issues (Site Safety and Environmental)

(Addressed by Staff, Contractor, and Sister Agencies under MOUs)



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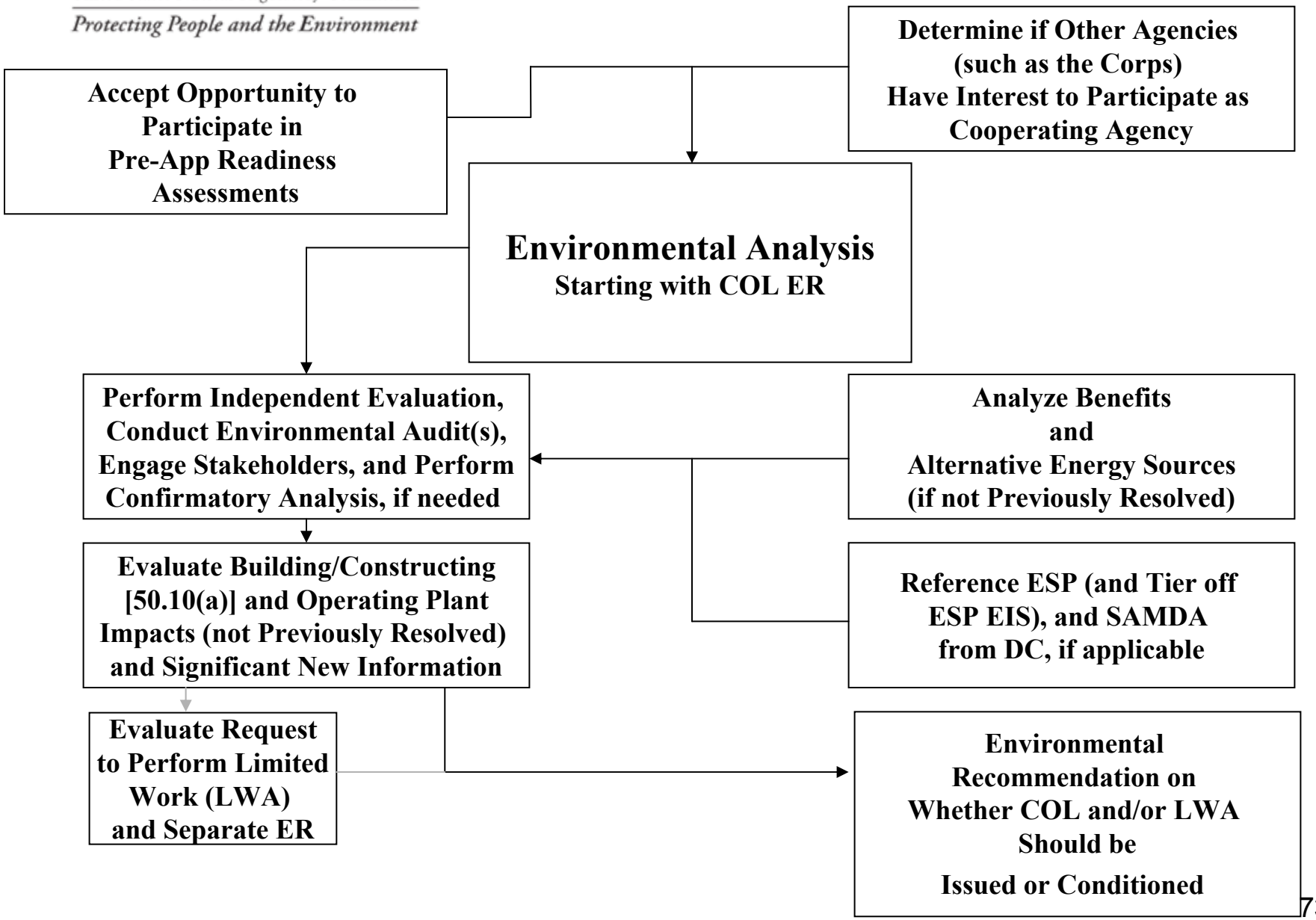
COL Analysis Approach



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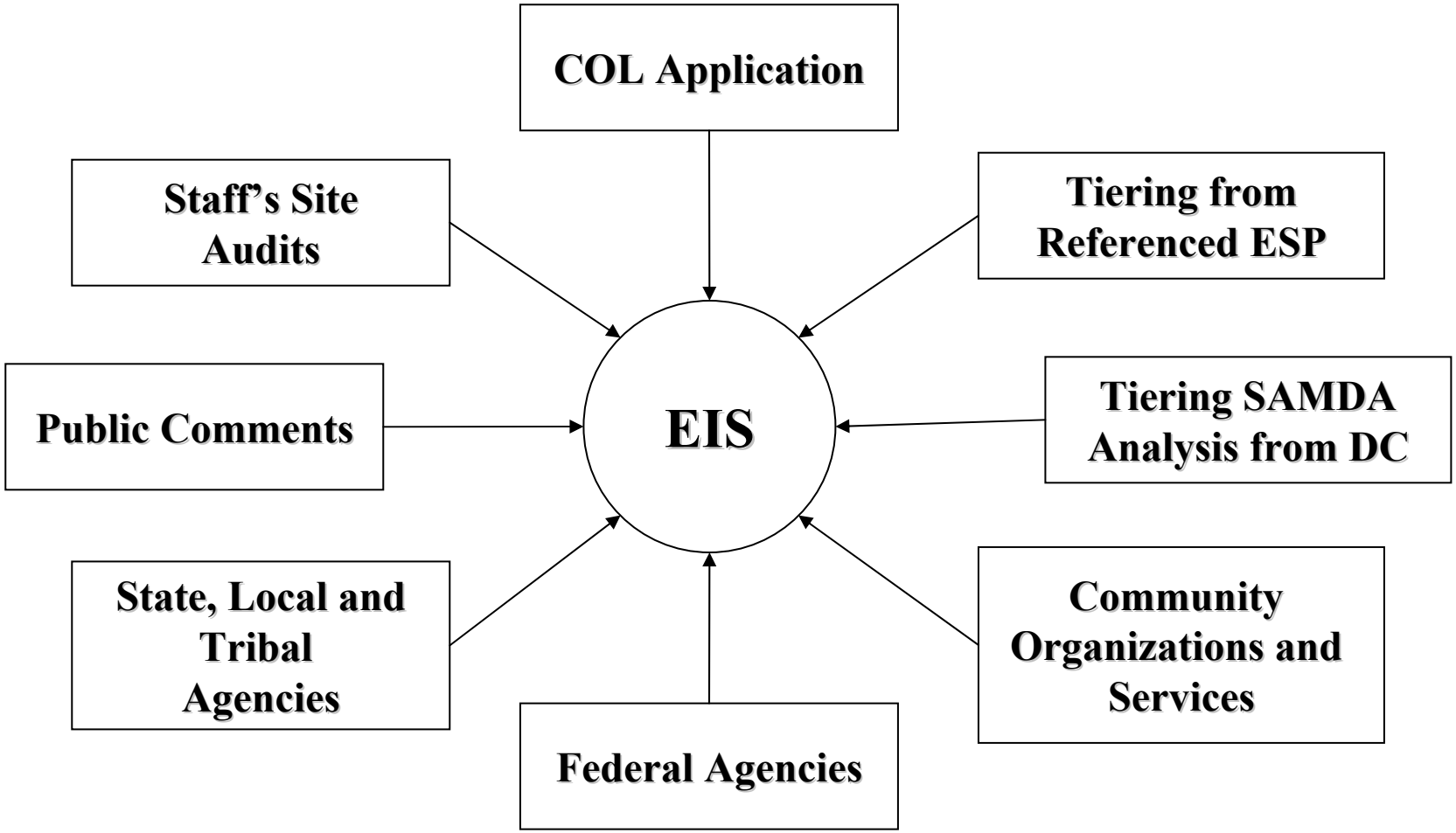
COL EIS Development



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Questions?

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Fuel Manufacturing and Transportation

Stewart Magruder

Advanced Reactors Branch 2

Office of New Reactors

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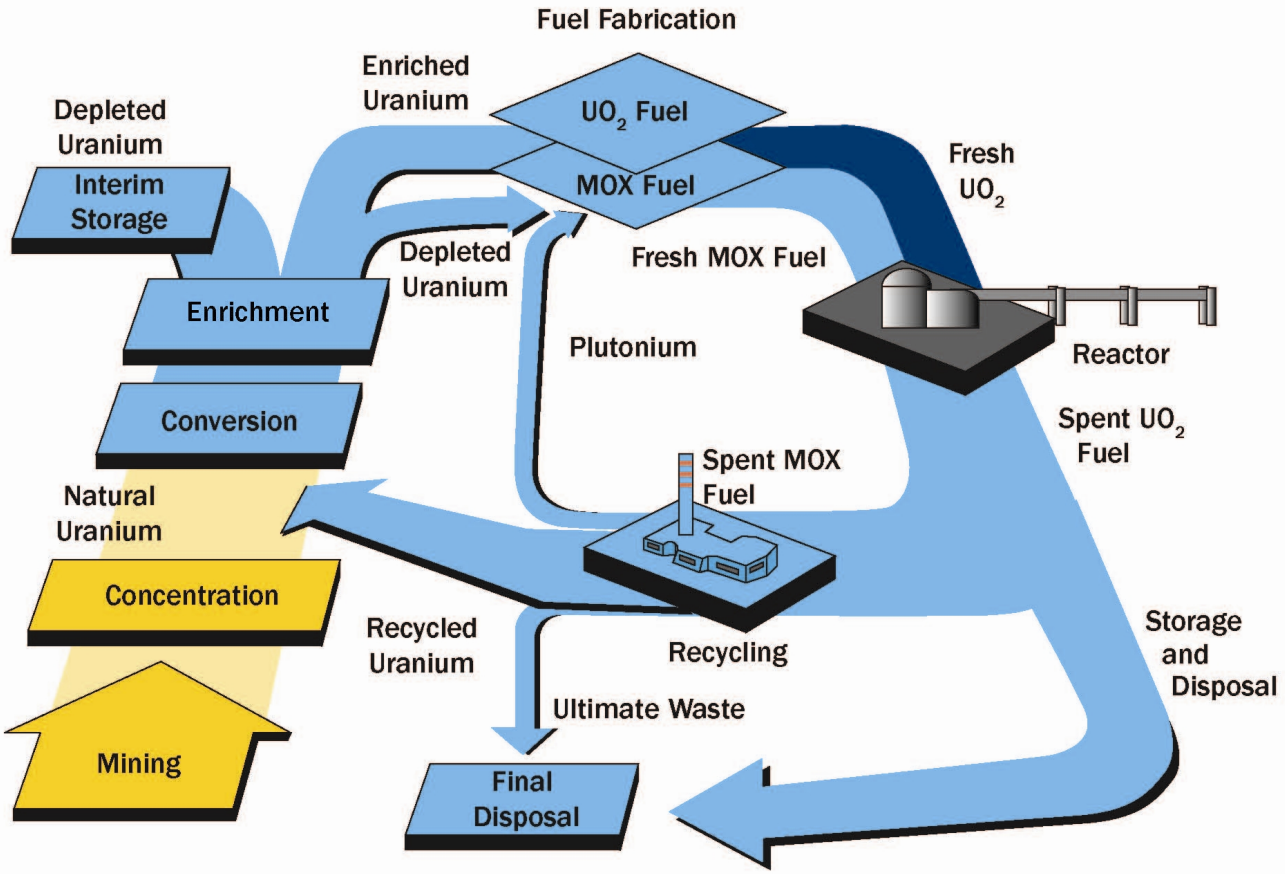
The Nuclear Fuel Cycle



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NMSS – Regulating the Nuclear Fuel Cycle

- Conversion
- Enrichment
- Fuel Fabrication
- Reprocessing
- Transportation
- Storage
- High-Level Radioactive Waste Disposal

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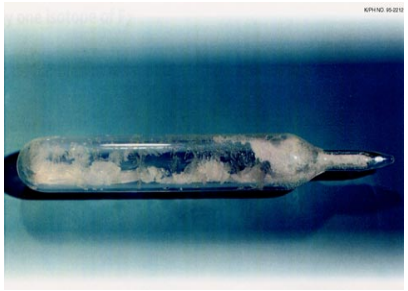
A Conversion Facility

- One facility in the U.S. converts uranium ore to uranium hexafluoride for enrichment
- Licensed under 10 CFR Part 40

Photo courtesy of Cogema, Inc./DOE



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Enrichment Facilities

- Two certified gaseous diffusion plants: Paducah (KY) & Portsmouth (OH)
- Two licensed centrifuge facilities: LES (NM) & USEC (OH)
- One proposed centrifuge facility: Areva (ID)
- One proposed laser facility: GE-Hitachi (NC)

Paducah

LES

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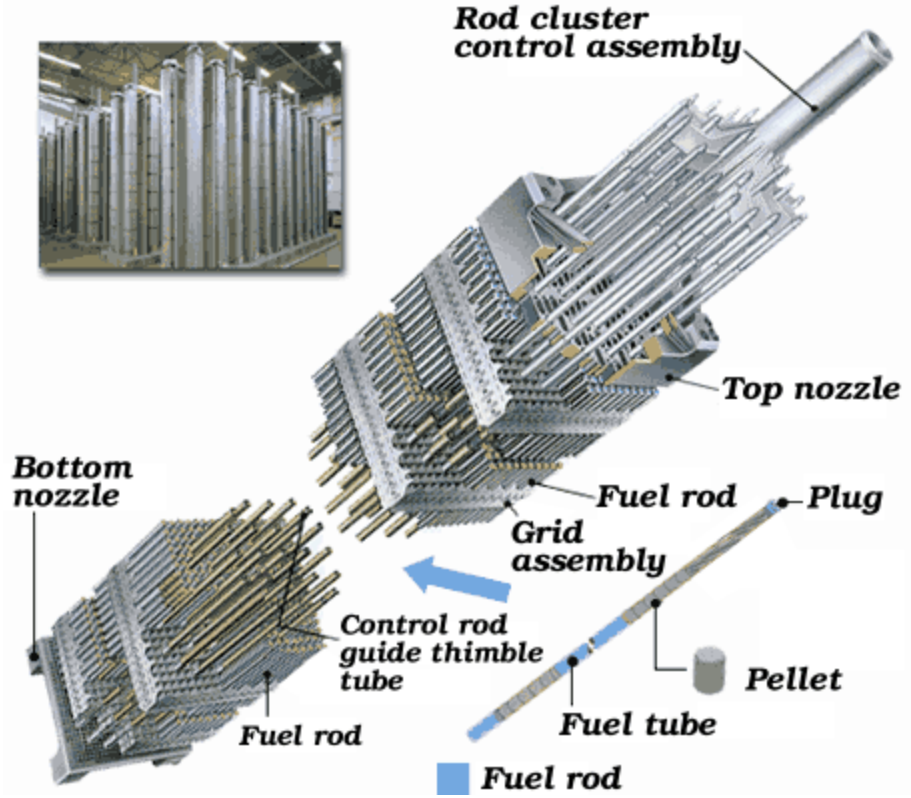
Fuel Fabrication Facilities

- Low-enriched fuel facilities
- High-enriched fuel facilities
- Proposed mixed-oxide facility



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Fuel Manufacturing

- 10 CFR Part 70 – "Domestic Licensing of Special Nuclear Material"
  - Special Nuclear Material is defined as:
    - Pu, U-233, U-235
    - Not source material
  - Licensing requirements for fuel manufacturing facilities

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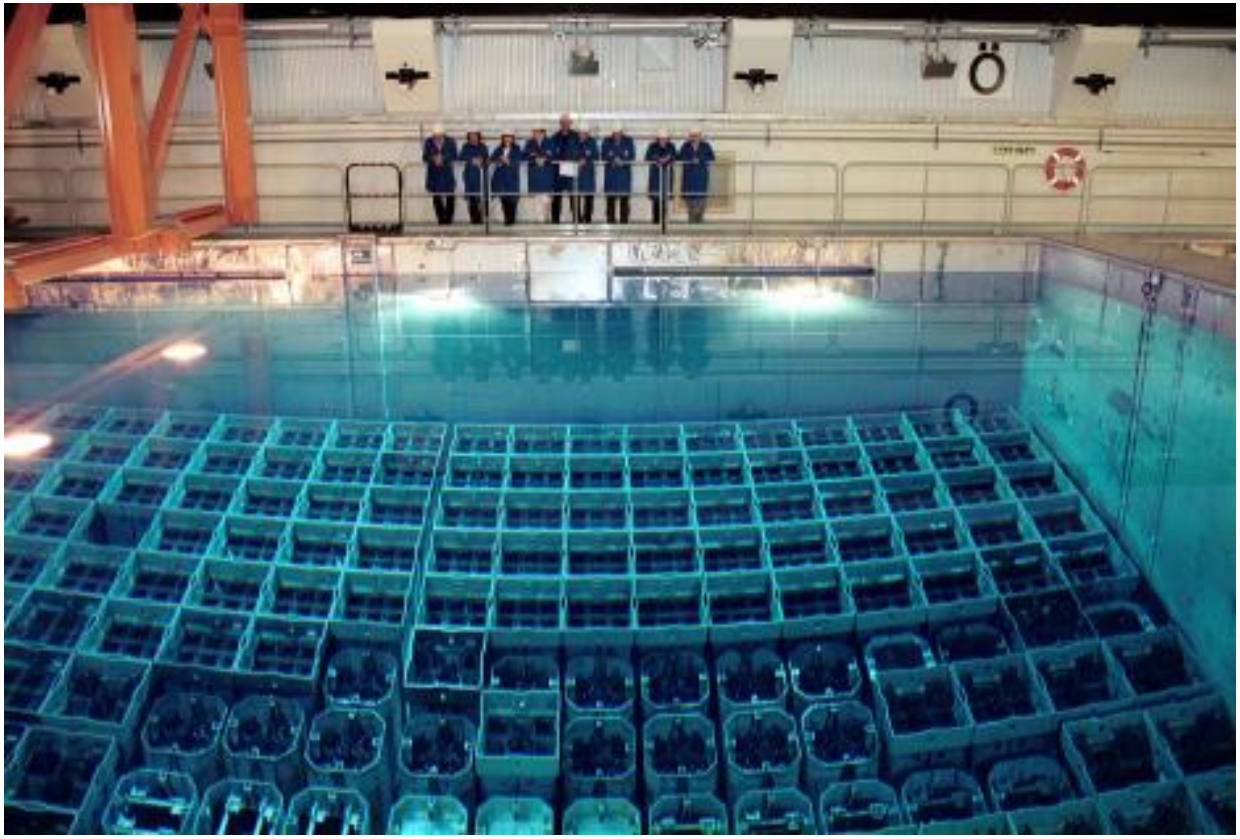
Wet Storage of Spent Fuel



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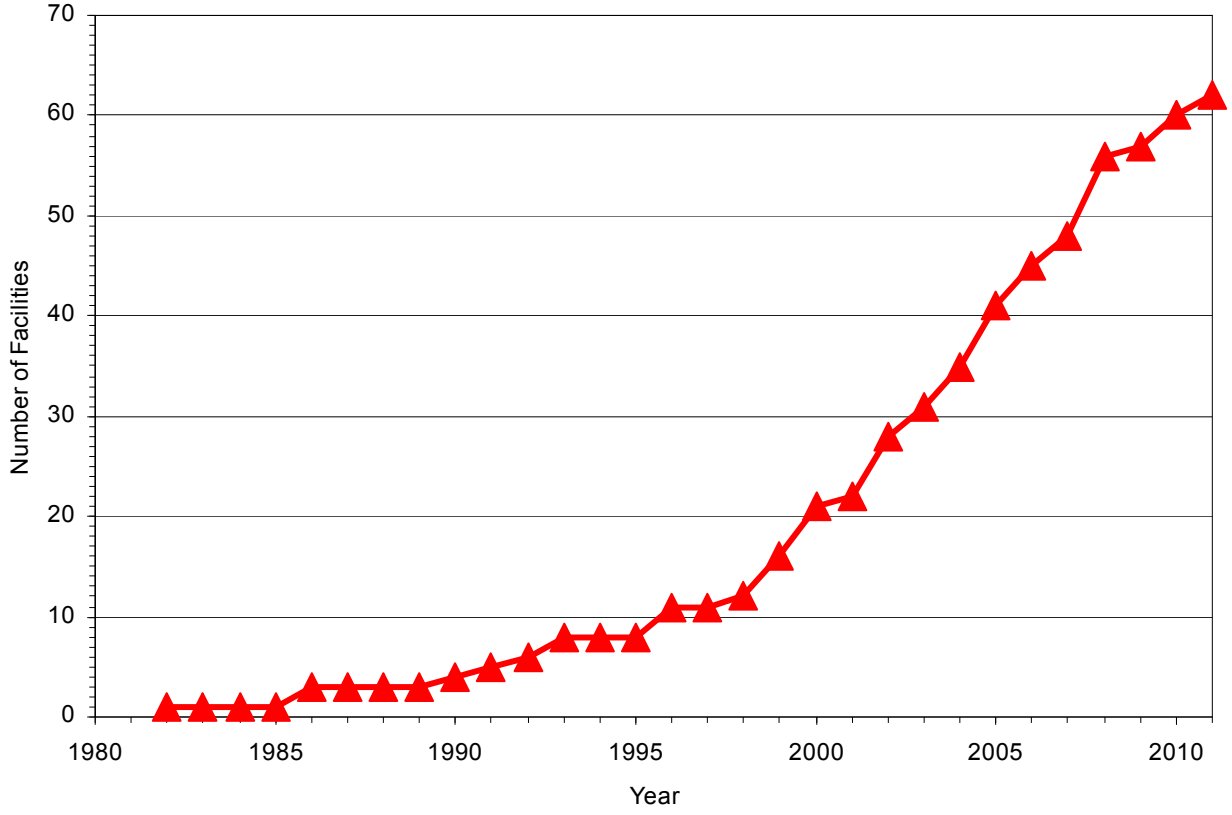
Growth in Dry Cask Storage of Spent Nuclear Fuel



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Dry Storage of Spent Fuel

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Spent Fuel Dry Cask Storage

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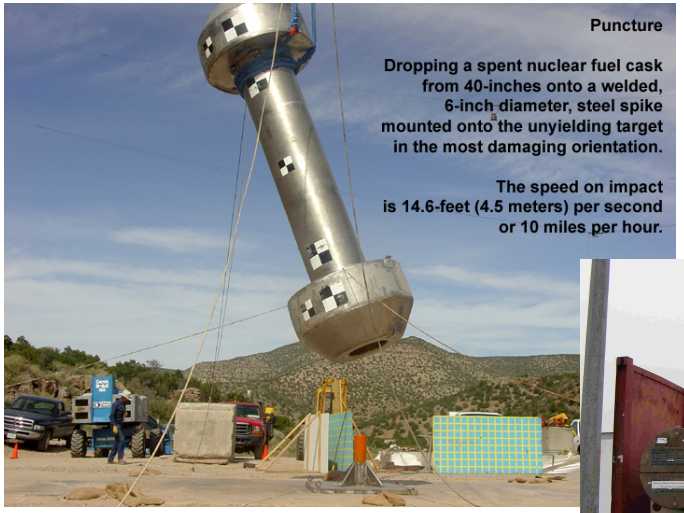
Radioactive Material Transport



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Transportation

- 10 CFR Part 71 – "Packaging and Transportation of Radioactive Material"
  - Subpart C - General licenses for transportation
    - U.S. and foreign approved packages
  - Subpart D – Application for package approval
  - Subpart E – Package approval standards
  - Subpart H – QA requirements

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Fuel Qualification

- 10 CFR Part 50 Appendix A
  - General Design Criteria (GDC) 10
    - Specified Acceptable Fuel Design Limits
  - GDC 27
    - Reactivity Control Systems
  - GDC 35
    - Emergency Core Cooling

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Guidance on Fuel Qualification

- NUREG – 0800 (Standard Review Plan)
  - Section 4.2 - “Fuel System Design”
    - Design Bases
    - Description and Design Drawings
    - Design Evaluation
    - Testing, Inspection, and Surveillance Plans

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Questions?

Nuclear Power Regulation and Export/Import Licensing

Brian Wittick

Office of International Programs

February 2010

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Objectives

- Review NRC's international roles and responsibilities
- Understand what exports and imports NRC licenses
- Discuss how decisions on NRC export/imports are made

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NRC in a Global Perspective

The changing landscape for international nuclear cooperation:

- New entrants with new nuclear programs
- Countries expanding existing nuclear power programs
- U.S. imports of equipment and materials

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NRC's International Activities

- International conventions and treaties
- Bilateral cooperation
- Multilateral cooperation
- Cooperative research

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Statutory Authority

- Atomic Energy Act of 1954, as amended
- Energy Reorganization Act of 1974, as amended
- Nuclear Non-Proliferation Act of 1978
- Energy Policy Act of 1992
- Energy Policy Act of 2005
- International Treaties

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NRC's Export/Import Licensing Authority:

- Exports: reactors; fuel cycle facilities; components; nuclear grade graphite for nuclear end use; heavy water; source, special nuclear and byproduct materials including spent fuel and radioactive waste

- Imports: reactors; fuel cycle facilities; and source, special nuclear and byproduct materials including spent fuel and radioactive waste

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NRC Export/Import Regulations 10 CFR Part 110

- Reflect statutory requirements
- Apply to anyone who exports or imports nuclear equipment and material with few exceptions
- Authorize export/import only – do not authorize receipt, acquisition, transfer, transport, possession
- Implement legally binding international treaties as well as non-legally binding international and multilateral agreements
- Provide for public review & comment

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Types of NRC Export Licenses

- General licenses issued as regulations in 10 CFR 110.21-110.26

- Specific licenses:
  - NRC Form 7 application & processing fee
  - Issued to named person authorizing export to named intermediate and ultimate consignees

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Specific Licenses - Review Process

- All applications made public
- Some require Federal Register notices
- Interested parties have up to about 30 days to respond
- Most require interacting with foreign governments
- Some require review by interested Executive Branch agencies, coordinated by Department of State
- Some require review and approval by Commissioners

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Appendix P and Non-Appendix P Licenses

- Non-Appendix P (NAP) licensing requirements have existed since the Atomic Energy Act was enacted in 1954

- Appendix P licensing requirements added in 2005

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Criteria for "Major" NAP Exports

- Agreement for Cooperation
- Full-scope IAEA safeguards in recipient non-nuclear weapon states (NNWS)
- USG must obtain assurances from the foreign government on case-by-case basis that material or equipment will be made subject to the Agreement with respect to:
  - No nuclear explosive use or R&D on any nuclear explosive device
  - Adequate physical security will be maintained
  - No retransfer or alteration in form (reprocessing) without prior USG consent
- Approval will not harm U.S. common defense and security

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Criteria for "Minor" Reactor Component Exports

- USG must obtain assurances from the foreign government on case-by-case basis that:
  - No nuclear explosive use or R&D on such device
  - IAEA (full-scope) safeguards will apply in NNWS
  - No retransfer without prior USG consent
- Approval will not harm U.S. common defense and security

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Criteria for Appendix P Exports

- Foreign recipient authorized to receive & possess
- Importing country has resources & regulatory capability; or meets “exceptional circumstances”
- Importing country provides consent for Category 1 amounts and “exceptional circumstances”
- No adverse information available on foreign recipient’s or importing country
- Approval will not harm U.S. common defense and security

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Criteria for Appendix P Imports

- U.S. recipient authorized to possess
- No adverse information available on U.S. recipient
- Approval will not harm U.S. common defense and security

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Summary

- ✓ Review NRC's international roles and responsibilities
- ✓ Understand what exports and imports NRC licenses
- ✓ Discuss how decisions on NRC export/imports are made

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For Additional Information

- http://www.nrc.gov
- http://www.nrc.gov/about-nrc/ip/export-import.html
- http://www.nrc.gov/about-nrc/ip/faq.html
- http://www.nrc.gov/reading-rm/doc-collections/cfr/part110/
- http://www.nrc.gov/reading-rm/doc-collections/forms/nrc7.pdf
- http://www.ita.doc.gov/td/energy/Civil%20Nuclear%20Exporters%20Guide%20(FINAL).pdf

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Questions?

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Meeting Wrap-Up

- Identify takeaways
- All presentation materials (including EP planning standards) will be available as an attachment to the meeting summary
- Travel safely!