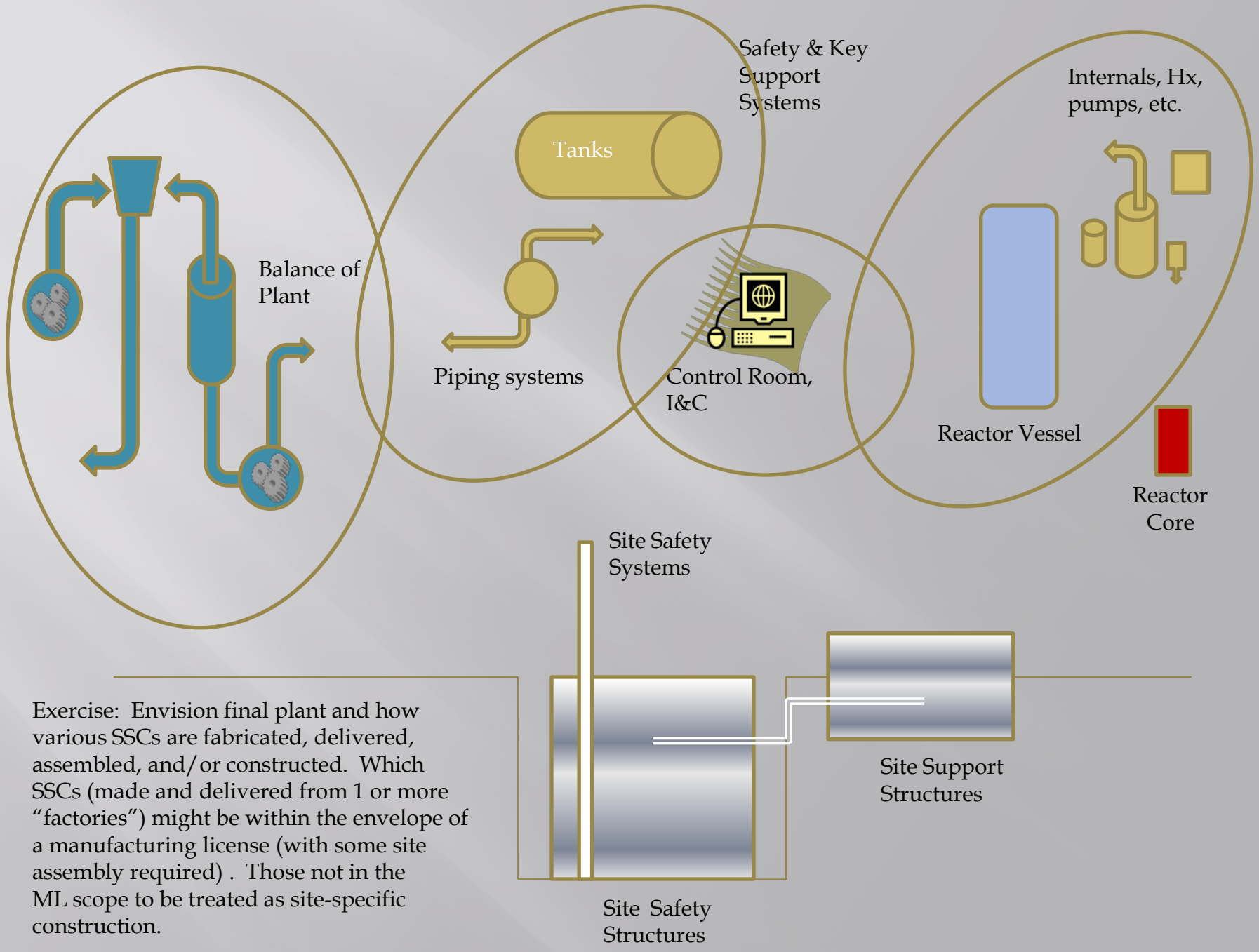
November 16, 2010

ATTACHED ARE THE SLIDES FROM THE "MANUFACTURING LICENSES" PRESENTATION, WHICH WAS GIVEN AT THE NOVEMBER 4, 2010 PUBLIC MEETING ON GENERIC LICENSING TOPICS AND POLICY ISSUES RELATED TO SMALL MODULAR REACTORS (MEETING NOTICE ML102871027)

THESE SLIDES WERE PROVIDED ON THE DATE OF THIS COVER SHEET, AFTER THE MEETING WAS HELD.

# Manufacturing Licenses

William Reckley
NRC/NRO/ARP




Exercise: Envision final plant and how various SSCs are fabricated, delivered, assembled, and/or constructed. Which SSCs (made and delivered from 1 or more "factories") might be within the envelope of a manufacturing license (with some site assembly required) . Those not in the ML scope to be treated as site-specific construction.

# Design Certifications

- NRC Approval via rulemaking
- Vendor Amendment Process
  - NRC Review & Rulemaking (No threshold)
- COL Departure Process
  - Tier 1 – Exemption (No threshold)
  - Tier 2 – "50.59-like" Process
    - Change without NRC approval & reporting
    - Change requiring NRC approval
      - License Amendment Process

# Manufacturing License

- NRC Approval via Issuance of License
- Vendor Amendment Process
  - License Amendment (No threshold)
- COL Departure Process
  - 10 CFR 52.171
    - An applicant or licensee who references or uses a nuclear power reactor manufactured under a manufacturing license under this subpart may request a departure from the design characteristics, site parameters, terms and conditions, or approved design of the manufactured reactor.

# Manufacturing License

- Contents of Application
  - 10 CFR 52.158 (see also ANS White Paper)
- Staff Review, ACRS Review & Hearing
  - 10 CFR 52.163, 52.165
- Finality of manufacturing licenses
  - 10 CFR 52.171 (change control provisions)
- Duration (5 – 15 years)
  - the holder of a manufacturing license may not begin manufacture of a reactor less than 3 years before the expiration of the license

# Manufacturing License

- NRC desire is to get a sense of interest in possible use of manufacturing license provisions
- Upcoming RIS will include question(s) regarding possible use of manufacturing license provisions
- Insights from interactions will inform NRC staff's issue resolution plan regarding possible changes to guidance and/or regulations

# Manufacturing Licenses

Discussion ?

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# Update on NRC Activities on Generic Policy Issues

**William D. Reckley**
**Advanced Reactor Program**
**Office of New Reactors**

# NRC Advanced Reactor Program

- Current focus of Office of New Reactors (NRO)
  - developing regulatory infrastructure and addressing generic policy issues for small modular reactors (SMRs)
  - Preparations for Next Generation Nuclear Plant (NGNP) applications
  - Preparations for other near-term SMR applications (e.g., integral PWR designs)

# Generic Licensing Issues

- NRC annual fees
  - Preparing Commission Paper
  - Issuance expected in January 2011
- Liability & property insurance requirements
  - Awaiting NEI Position Paper
  - Limited assessment of approaches/options
- Decommissioning Funding
  - Reviewing NEI Position Paper
  - Evaluating Appropriate Response
    - Guidance Documents

# Generic Licensing Issues

- Multi-Module Licensing
  - Reviewing NGNP White Paper
  - Awaiting NEI Position Paper
  - Preparing Commission Paper
  - Issuance expected in Spring 2011
- Risk Informed Licensing Approach
  - Includes defense-in-depth, PRA
  - SRM Response
  - Reviewing NGNP White Papers
  - Preparing Commission Paper
  - Issuance expected in February 2011

# Generic Licensing Issues

- Key Component and System Design Issues
  - Identifying key technical issues
    - NRC staff, National Laboratories
  - Initiating appropriate internal & external discussions
  - Some may involve Commission notifications and/or policies; many should involve significant pre-application interactions

# Generic Licensing Issues

- Appropriate Source Term
  - Reviewing NGNP White Paper (mechanistic)
  - Awaiting information regarding iPWRs
  - Evaluating Possible Approaches/Options
  - Important Relationships to Other Issues
- Emergency Preparedness
  - Reviewing NGNP White Paper
  - Awaiting NEI Position Paper
  - Evaluating Possible Approaches/Options
  - To prepare one or more Commission papers

# Generic Licensing Issues

- Operator Staffing
  - Ongoing interactions with vendors
  - Developing approach to assess staffing proposals
  - Interactions with NRC Office of Nuclear Regulatory Research, other research activities
  - Will engage stakeholders
    - Position Papers, Topical Reports, etc.
  - To prepare one or more Commission Paper
  - Issuance Expected by Summer 2011
- Other staffing requirements?

# Generic Licensing Issues

- Industrial Facilities/Process Heat
  - NGNP Interactions
- Security and Safeguards Requirements for SMRs
  - Assessing Possible Approaches/Options
  - SGI Protection Programs – Information to Vendors
- Aircraft Impact Assessments for SMRs
- Loss of Large Areas Due to Fires/Explosions
- Operational Programs

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# Licensing Insights from New Reactor Applications and Reviews

**William D. Reckley**
**Advanced Reactor Program**
**Office of New Reactors**

# COL Application

| | |
|---|---|
| Part 0 | Cover Letter, Affidavits, etc |
| Part 1 | Administrative and Financial Information |
| Part 2 | Final Safety Analysis Report (FSAR) |
| Part 3 | Environmental Report |
| Part 4 | Technical Specifications |
| Part 5 | Emergency Plan |
| Part 6 | Limited Work Authorization |
| Part 7 | Departures and Exemption Requests |
| Part 8 | Safeguards/Security Plans |
| Part 9 | -- Sensitive Information – |
| Part 10 | ITAAC |
| Part 11 | Enclosures |

# Part 2 – FSAR

1 Introduction and General Description of the Plant
2 Site Characteristics
3 Design of Structures, Systems, Components, and Equipment
4 Reactor
5 Reactor Coolant and Connecting Systems
6 Engineered Safety Features
7 Instrumentation and Controls
8 Electric Power
9 Auxiliary Systems
10 Steam and Power Conversion System
11 Radioactive Waste Management
12 Radiation Protection
13 Conduct of Operations
14 Verification Programs
15 Transient and Accident Analyses
16 Technical Specifications
17 Quality Assurance and Reliability Assurance
18 Human Factors Engineering
19 Probabilistic Risk Assessment and Severe Accident Evaluation

# Guidance & Insights from New Reactor Pre-Application Interactions and Subsequent Reviews

- Standard Review Plan
  - Branch Technical Positions
- Regulatory Guides
- Interim Staff Guidance
- Industry Codes and Standards
- Regulatory Guide 1.206
- NRC Safety Evaluation Reports
- Applications, RAIs, Responses & Revisions