Available NRC Licensing Pathways and Associated Hearing Processes

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Agenda

• Available NRC Licensing Pathways
  o Part 50 Construction Permit/Operating License
  o Part 52 Design Certification
  o Part 52 Early Site Permit (ESP)
  o Part 52 Combined License (COL)

• Available Hearing Processes
  o Contested Hearing
  o Mandatory Hearing
  o ITAAC Hearing
Part 50 Two-Step Licensing

- Licensing process used for current operating commercial reactors
- Construction Permit
  - Required prior to construction of a reactor
  - Application
    - Environmental
    - Siting
    - Preliminary Safety Analysis Report (PSAR)
  - “will not constitute Commission approval of the safety of any design feature or specification unless the applicant specifically requests such approval and such approval is incorporated in the permit” 10 CFR 50.35(b)
    - Greater level of detail likely required if seeking such approval
  - States the earliest and latest dates for completion of construction (may extend)
- Flexibility with design changes during construction
Part 50 Two-Step Licensing

• Operating License
  o Required prior to operation of a reactor
  o Application
    • Final Safety Analysis Report (FSAR)
    • Technical Specifications
    • Emergency plan
    • Security plan
  o Issued for 40-year initial term; may be renewed for 20-year periods
  o NRC must find “construction of the facility has been substantially completed”

• Hearing opportunities at both stages
• Process traditionally has been lengthy and costly
Part 50 Construction Permit

Conconstruction Permit Application → NRC Docketing Decision → NRC Staff Safety Review → ACRS Review → Mandatory Hearing for Construction Permit → Construction Permit Decision

Contested Hearing Opportunity → Mandatory Hearing
Part 50 Operating License
Part 52 Overview ("One-step")

Source: NUREG/BR-0298, Rev. 2
Design Certification

- NRC approval of a standard plant design
  - Requires an essentially complete design
- Certification through rulemaking process
  - Opportunity for public comment
- Design Control Document
  - Tier 1 – Top level design information, reflected in the Rule certifying the design
  - Tier 2 – Similar to FSAR
- Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)
- Finality of approved design issues in COL review
- Departure/change process
- Certifications effective for 15 years, but may be renewed
  - Reactor may be supplied by any qualified vendor
Design Certification (continued)

Source: NUREG/BR-0298, Rev. 2
## Design Certification (continued)

<table>
<thead>
<tr>
<th>Design</th>
<th>Date Received</th>
<th>Certification Effective</th>
<th>Duration</th>
<th>Status</th>
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<tbody>
<tr>
<td>System 80+ (Part 52, App. B)</td>
<td>03/30/1989</td>
<td>06/20/1997</td>
<td>~ 8 years</td>
<td>Expired</td>
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<td>AP600 (Part 52, App. C)</td>
<td>06/26/1992</td>
<td>01/24/2000</td>
<td>~ 7.5 years</td>
<td>Expired</td>
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<td>AP1000 (Part 52, App. D)</td>
<td>03/28/2002</td>
<td>02/27/2006</td>
<td>~ 4 years</td>
<td>Revision effective 2011</td>
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<tr>
<td>ESBWR (Part 52, App. E)</td>
<td>08/24/2005</td>
<td>11/14/2014</td>
<td>~ 9 years</td>
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<td>APR1400 (Part 52, App. F)</td>
<td>12/23/2014</td>
<td>09/19/2019</td>
<td>~ 5 years</td>
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<tr>
<td>U.S. EPR</td>
<td>12/11/2007</td>
<td>N/A</td>
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<td>Suspended</td>
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<tr>
<td>US-APWR</td>
<td>12/31/2007</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>NuScale</td>
<td>01/06/2017</td>
<td>N/A</td>
<td>N/A</td>
<td>Review Complete</td>
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Early Site Permit

• Pre-approval of site for future reactor construction (NEPA/Site Safety)
• Application
  o Siting Information (e.g., seismology)
  o Environmental Report (no Need for Power analysis required)
  o Major features of emergency plans (or complete and integrated plans)
• Plant Parameter Envelope (PPE)
• ESPs valid for period of 10-20 years (may be renewed)
• Finality in COL proceeding with some exceptions (e.g., new and significant environmental information)
• Limited Work Authorizations
Early Site Permit (continued)

Source: NUREG/BR-0298, Rev. 2
<table>
<thead>
<tr>
<th>Project (Applicant)</th>
<th>Design</th>
<th>Date Received</th>
<th>ESP Issued</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Clinton (Exelon)</td>
<td>PPE</td>
<td>09/25/2003</td>
<td>03/15/2007</td>
<td>3 years, 6 months</td>
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<tr>
<td>Grand Gulf (SERI)</td>
<td>PPE</td>
<td>10/21/2003</td>
<td>04/05/2007</td>
<td>3 years, 6 months</td>
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<tr>
<td>North Anna (Dominion)</td>
<td>PPE</td>
<td>09/25/2003</td>
<td>11/27/2007</td>
<td>4 years, 2 months</td>
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<tr>
<td>Vogtle (Southern)</td>
<td>AP1000</td>
<td>08/15/2006</td>
<td>08/26/2009</td>
<td>3 years</td>
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<tr>
<td>PSEG (PSEG)</td>
<td>PPE</td>
<td>05/25/2010</td>
<td>05/05/2016</td>
<td>6 years</td>
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<tr>
<td>Clinch River (TVA)</td>
<td>PPE (SMRs)</td>
<td>05/12/2016</td>
<td>12/19/2019</td>
<td>3 years, 7 months</td>
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</table>
Combined License

- Authorizes construction and operation of a reactor
- May reference a Design Certification and/or ESP
- Includes ITAAC
  - Must be satisfied prior to fuel load
- Application
  - General and financial information
  - Final Safety Analysis Report
  - Environmental Report
  - Emergency Plan
  - Security Plan
  - Departures
  - ITAAC
- Issued for 40-year initial term (from all-ITAAC complete finding); may be renewed for 20-year periods
Combined License (continued)

Source: NUREG/BR-0298, Rev. 2
Combined License (continued)

<table>
<thead>
<tr>
<th>Proposed New Reactor(s)</th>
<th>Design</th>
<th>Applicant</th>
<th>Status</th>
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<tbody>
<tr>
<td>Aurora</td>
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<tr>
<td>Bell Bend Nuclear Power Plant</td>
<td>U.S. EPR</td>
<td>PPL Bell Bend, LLC</td>
<td>Withdrawn</td>
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<tr>
<td>Bellefonte Nuclear Station, Units 3 and 4</td>
<td>AP1000</td>
<td>Tennessee Valley Authority (TVA)</td>
<td>Withdrawn</td>
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<td>Calasaya Plant, Unit 2</td>
<td>U.S. EPR</td>
<td>AmeroneU</td>
<td>Withdrawn</td>
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<td>Calvert Cliffs, Unit 3</td>
<td>U.S. EPR</td>
<td>Calvert Cliffs 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLC</td>
<td>Withdrawn</td>
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<tr>
<td>Comanche Peak, Units 3 and 4</td>
<td>US-APWR</td>
<td>Luminant Generation Company, LLC (Luminant)</td>
<td>Suspended</td>
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<tr>
<td>Fermi, Unit 3</td>
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<tr>
<td>Grand Gulf, Unit 3</td>
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<td></td>
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<tr>
<td>Levy Nuclear Plant, Units 1 and 2</td>
<td>AP1000</td>
<td>Duke Energy Florida, LLC (DEF)</td>
<td>Issued*</td>
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<td>Nine Mile Point, Unit 3</td>
<td>U.S. EPR</td>
<td>Nine Mile Point 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLC (Unistar)</td>
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<tr>
<td>North Anna, Unit 3</td>
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<td>River Bend Station, Unit 3</td>
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<td>Entergy Operations, Inc. (EDO)</td>
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<td>Shearon Harris, Units 2 and 3</td>
<td>AP1000</td>
<td>Progress Energy Carolinas, Inc. (PEC)</td>
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<td>South Texas Project, Units 3 and 4</td>
<td>ABWR</td>
<td>Nuclear Innovation North America, LLC (NINA)</td>
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<tr>
<td>Turkey Point, Units 6 and 7</td>
<td>AP1000</td>
<td>Florida Power &amp; Light Company (FPL)</td>
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<td>Victoria County Station, Units 1 and 2</td>
<td>ESBWR</td>
<td>Exelon Nuclear Texas Holdings, LLC (Exelon)</td>
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<td>Virgil C. Summer, Units 2 and 3</td>
<td>AP1000</td>
<td>South Carolina Electric &amp; Gas (SCE&amp;G)</td>
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<tr>
<td>Vogtle, Units 3 and 4</td>
<td>AP1000</td>
<td>Southern Nuclear Operating Company (SNC)</td>
<td>Issued*</td>
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<tr>
<td>William States Lee III, Units 1 and 2</td>
<td>AP1000</td>
<td>Duke Energy</td>
<td>Issued*</td>
</tr>
</tbody>
</table>

- Fermi 3
- Levy Nuclear Plant Unit 1 – Terminated (4/26/2018)
- Levy Nuclear Plant Unit 2 – Terminated (4/26/2018)
- North Anna Plant Unit 3
- South Texas Project Unit 3 – Terminated (7/12/2018)
- South Texas Project Unit 4 – Terminated (7/12/2018)
- V.C. Summer Unit 2 – Terminated (3/6/2019)
- V.C. Summer Unit 3 – Terminated (3/6/2019)
- Vogtle Unit 3
- Vogtle Unit 4
- William States Lee III Nuclear Station Unit 1
- William States Lee III Nuclear Station Unit 2
- Turkey Point Unit 6
- Turkey Point Unit 7

Source: https://www.nrc.gov/reactors/new-reactors/col.html
Combined License (continued)

• COL includes authorization to construct and operate once ITAAC satisfied
• ITAAC ensure that a facility is constructed and operated in accordance with the COL and other applicable requirements
• ITAAC Example:
  o Design Commitment – pump flow rate > 100 gpm
  o ITA – test pump flow rate
  o AC – pump flow rate > 100 gpm
• ITAAC closed during construction
  o Licensee informs NRC when ITAAC satisfied
  o NRC reviews closeout letters, conducts some inspections, publishes notice
  o Operation after NRC concludes under 10 CFR 52.103(g) all ITAAC satisfied
• NRC can suspend fuel load and operation if necessary
Part 50 versus Part 52

- Part 50
  - Allows construction to begin earlier in licensing process
  - Flexibility during construction
  - Lack of finality on CP issues into OL review
  - Potential for delay in OL issuance (e.g., design evolutions during construction)
  - Repetitive hearing opportunities
  - Little recent licensing experience

- Part 52
  - More finality from licensing process
  - Changes during construction necessitate licensing actions
  - All regulatory reviews must be completed before construction can begin
  - Significant recent experience issuing certifications/licenses
  - Has not yet resulted in operation (Vogtle 3&4 nearing completion)

- Need to find right approach for your company
Contested Hearing

Sec. 190. Contested Operation of Facilities

The Commission shall have the power to make and enforce rules and regulations concerning the operation of a production facility or utilization facility for which a license has been issued to the person applying or acquiring the facility. Such rules and regulations shall be made to ensure that the operation of the facility will be conducted in a manner that is consistent with the public interest, public health, and safety.

Sec. 191. Hearings and Judicial Review

A person applying for a license to construct or operate a production facility or utilization facility, or a person otherwise affected by a license issued under this Act, may file a petition for a hearing with the Commission. The Commission shall issue a notice and publication of the petition, and a hearing shall be held at a time and place specified in the notice. The decision of the Commission shall be final, and may be appealed to the United States Court of Appeals for the District of Columbia.

In any proceeding under this Act, for granting, suspending, revoking, or amending any license or construction permit, or application to transfer control, and in any proceeding for the issuance or modification of rules and regulations dealing with the activities of licensees, and in any proceeding for the payment of compensation, an award, or penalties under this Act, the burden of proof shall be on the party seeking relief.

Sec. 192. Enforcement

Any person who violates any provision of this Act or any rule or regulation issued thereunder shall be subject to a civil penalty of not more than $10,000 per violation. The Commission may, in its discretion, require any person to pay the cost of any investigation or enforcement proceedings conducted under this Act.

Sec. 193. Renewal of License

Any license issued under this Act shall remain in effect for a term of ten years, unless it is terminated or suspended under this Act.

Sec. 194. Penalties

Any person who violates any provision of this Act or any rule or regulation issued thereunder shall be subject to a civil penalty of not more than $10,000 per violation. The Commission may, in its discretion, require any person to pay the cost of any investigation or enforcement proceedings conducted under this Act.

Sec. 195. Time Limitations

Any proceeding under this Act shall be brought within two years of the date on which the violation giving rise to the proceeding occurred.
Contested Hearing – Requirements

• Four Primary Requirements for Granting Hearing
  o 1. Hearing Opportunity
  o 2. Timely
  o 3. Standing to Intervene
    • Harm
    • Causal Link
    • Redressability
    • Proximity Presumption (“obvious potential for offsite consequences”)
  o 4. Admissible Contention
    • Statement of the Issue to Be Controverted
    • Brief Explanation of the Basis
    • Within Scope of Licensing Action
    • Material to the Findings to Be Made by the NRC
    • Concise Statement of the Alleged Facts or Expert Opinions
    • Genuine Dispute Exists
Contested Hearing – Requirements (continued)

• Relevant Regulations (10 CFR Part 2)
  o Subpart C – Rules of General Applicability for Hearings
  o Subpart G – Rules for Formal Adjudications
  o Subpart L – Simplified Hearing Procedures
    • Default; almost always apply

• Atomic Safety and Licensing Board (ASLB)
  o 3 judge panel appointed (typically 1 legal, 2 technical)
  o Controls proceeding (e.g., schedule, motions rulings, decisions)

• Contention Topics
  o Environmental (e.g., endangered species, need for power, environmental justice)
  o Safety (e.g., design, accidents, seismic hazard)
  o Other (e.g., financial assurance)
  o Proposed contentions are not all created equal
Contested Hearing – Typical Pre-Hearing Process

- Hearing Request (60 days after opp.)
- Appoint Atomic Safety and Licensing Board
- Answers (25 days after request)
- Decision (couple months later)
- Oral Argument (discretionary)
- Reply (7 days after answers)
- Interlocutory Appeals to Commission
- Scheduling Order
- Mandatory Disclosures

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Contested Hearing – Activities During Application Review

• Attempts to Dismiss or Narrow Admitted Contentions
  o Motion for Summary Disposition
    • Granted if No Genuine Issue of Material Fact or Law
  o Motion to Dismiss
    • Application amendments
    • Staff documents (e.g., Draft Environmental Impact Statement)
  o Settlement

• Mandatory Disclosures
  o “A copy, or a description by category and location, of all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions . . .” 10 CFR 2.336(a)(2)
  o Agreement among parties
  o Protective Order
  o Parallel Staff Hearing File

• New or Amended Contentions
  o (i) The information upon which the filing is based was not previously available;
  o (ii) The information upon which the filing is based is materially different from information previously available; and
  o (iii) The filing has been submitted in a timely fashion based on the availability of the subsequent information
Contested Hearing – Typical Evidentiary Hearing Process
Sec. 108. Continued Operation of Facilities

Notwithstanding any provision of Federal law to the contrary and the Commission's authority to suspend or revoke a license, if the Commission finds that the public convenience and necessity will not be served by such action, and the Commission requires continued operation of a production facility or utilization facility the license for which has been issued pursuant to section 108, the Commission may, after consultation with the appropriate regulatory agency, State or Federal, having jurisdiction, and after notice to the affected persons and in such proceedings as the Commission may determine to be appropriate, order the facility to continue in operation for such period of time as the public convenience and necessity, or the production program of the Commission, in the judgment of the Commission, may require. Such order may, after consultation with the appropriate regulatory agency, State or Federal, having jurisdiction, and after notice to the affected persons and in such proceedings as the Commission may determine to be appropriate, order the facility to cease and desist from operation.

Sec. 109. Hearings and Judicial Review

(a) (1) (A) Any proceeding under this Act, for the granting, suspending, revoking, or amending any license or construction permit, or application to transfer control, and in any proceeding for the renewal or modification of rules and regulations dealing with the activities of licensees, and in any proceeding for the payment of compensation, on an award, or replies under this Act, shall be commenced by filing an application with the Commission. (B) In any proceeding referred to in paragraph (A) of this subsection, the order of the Commission shall become effective. Any compensation shall be paid for the use of the facility.

The Commission shall hold a hearing after thirty days’ notice and publication once in the Federal Register, on each application under section 103 or 104b for a construction permit for a facility, and on any application under section 106b for a construction permit for a testing facility. In cases where such a construction permit has been issued following the holding of such a hearing, the Commission may, in the absence of a request therefor by any party, order the construction permit included in the permit for a construction permit or an amendment to a construction permit or an amendment to an operating license to cease, but upon thirty days’ notice and publication once in the Federal Register, in its discretion to do so. The Commission may deny such a request for such thirty days’ notice and publication with respect to any application for an amendment to a construction permit or an amendment to an operating permit to a determination by the Commission that the amendment involves a significant health consideration.

(b) For a period of not less than one hundred days before the date scheduled for commencement of a hearing, the Commission shall publish a combined construction permit and operating license under section 18(b), the Commission shall publish in the Federal Register notice of intended operations. Such notice shall provide that any person whose interest may be affected by operation of the plant may

42 USC 2238.

42 USC 2239.

Federal Register Publication.
Mandatory Hearing – Overview

- Required for “construction permits,” including ESPs and COLs
  - ESP considered partial construction permit
- Mandatory even if no challenges exist
- Applicant and NRC Staff are only parties
- Commission conducts, or delegates to ASLB
- Begins with NRC Staff SECY paper supporting licensing action
  - After Final Safety Evaluation Report/Final Environmental Impact Statement
- About 6 months from SECY paper to decision
Mandatory Hearing - Process

1. Staff SECY
2. Pre-Hearing Q&A
3. Pre-Hearing Testimony/Witness Lists
4. Scheduling Order
5. In-Person Hearing with Presentations and Witness Q&A
6. Transcript Corrections
7. Post-Hearing Q&A
8. Decision
Not less than 180 days before the date scheduled for initial loading of fuel into a plant by a licensee that has been issued a combined construction permit and operating license under section 185b., the Commission shall publish in the Federal Register notice of intended operation. That notice shall provide that any person whose interest may be affected by operation of the plant may within 60 days request the Commission to hold a hearing on whether the facility as constructed complies, or on completion will comply, with the acceptance criteria of the license.
ITAAC Hearing

• COL holder required to submit uncompleted ITAAC notification (UIN) at least 225 days before scheduled fuel load
• NRC issues Notice of Intended Operation at least 180 days before fuel load
  o Provides the opportunity to request an ITAAC hearing
  o May be published earlier (up to 285 days before fuel load if UIN submitted earlier)
• Narrow hearing opportunity:
  o Standing
  o Contention admissibility requirements
  o Must make *prima facie* showing:
    • 1. one or more of the acceptance criteria in the COL have not been, or will not be met;
    • 2. the specific operational consequences of nonconformance that would be contrary to providing reasonable assurance of adequate protection of the public health and safety
• Claims of incompleteness
  o ITAAC closure incomplete and prevents *prima facie* showing
  o If sustained, licensee must provide information and then a new opportunity for proposing contentions
Generally follows informal hearing procedures modified to address expedited schedule and specialized nature
  - Generic ITAAC hearing procedures (81 Fed. Reg. 43,266), but subject to case-specific changes
  - Template A – Notice of Intended Operation and Associated Orders
  - Template B – Procedures for Hearings Involving Testimony
  - Template C – Procedures for Hearings Not Involving Testimony
  - Template D – Procedures for Resolving Claims of Incompleteness

Hearing process begins in front of Commission, but portions delegated to the ASLB (e.g., evidentiary hearing)
Hearings could delay operation
  o “The Commission shall, to the maximum possible extent, render a decision on issues raised by the hearing request within 180 days of the publication of the [NOI] or the anticipated date for initial loading of fuel into the reactor, whichever is later.” 10 CFR 52.103(e).
  o Tight hearing schedule
  o Near end of construction

The Commission may allow interim operation under 10 CFR 52.103(c) pending completion of hearings, if reasonable assurance exists
  o E.g., challenged issue will not be present during interim operation; sufficient mitigation measures
Key Hearing Takeaways

- Adversarial process (other than mandatory hearings)
- Almost every new reactor proceeding has been challenged
  - Wide range of level of challenges (e.g., 1 vs. 5 petitioners, 1 vs. 30 contentions)
- Potential for delay because hearings may be on critical path
- Engage experienced legal counsel
- Structured process, but always unique features/uncertainties
- Prepare ahead of time
  - Ensure documentation in order
  - Account for hearing possibility in schedules and budgets
- Applicants typically prevail because flexibility to address any valid contested issues