

Emergent Changes during Construction

October 18, 2012



NUCLEAR
ENERGY
INSTITUTE

Meeting Objectives

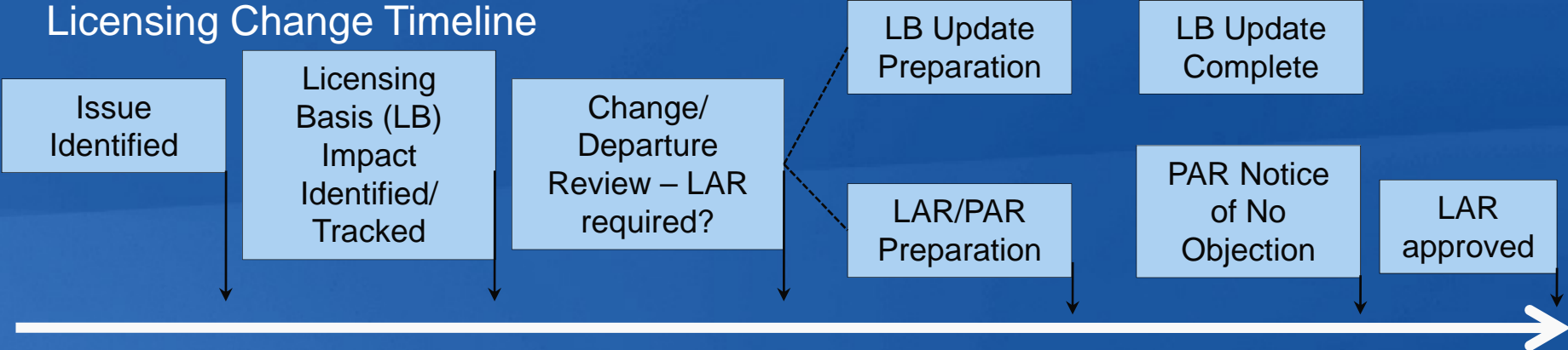
- Describe in detail a more efficient process for handling emergent changes during construction
- Discuss the need and benefits of the process
- Discuss key process attributes and consistency with regulations/legal basis
- NRC feedback and path forward

AGENDA

- **Proposed Process**
 - **Flexibility During Construction**
- **Regulatory Compliance and Industry Practice**
- **Benefits**
- **Conclusion**

Emergent Changes During Construction - Timeline

Licensing Change Timeline



Construction Activity - Current



Construction Activity - Proposed



Licensee & NRC Awareness



Proposal for Emergent Change Process

- **Initial Impact Review of Licensing Basis, Tier 1, Tier 2* and Tech Specs is complete**
- **Construction continues while licensing change package is being finalized**
 - **At-risk**
 - **NRC Resident is made aware for inspection scheduling**
 - **Licensing actions follow as required based upon results of Screening**
 - **No impact – no licensing action required**
 - **Departure – update CLB**
 - **LAR – stop construction until LAR/PAR**

Previously Identified vs. Emergent Changes

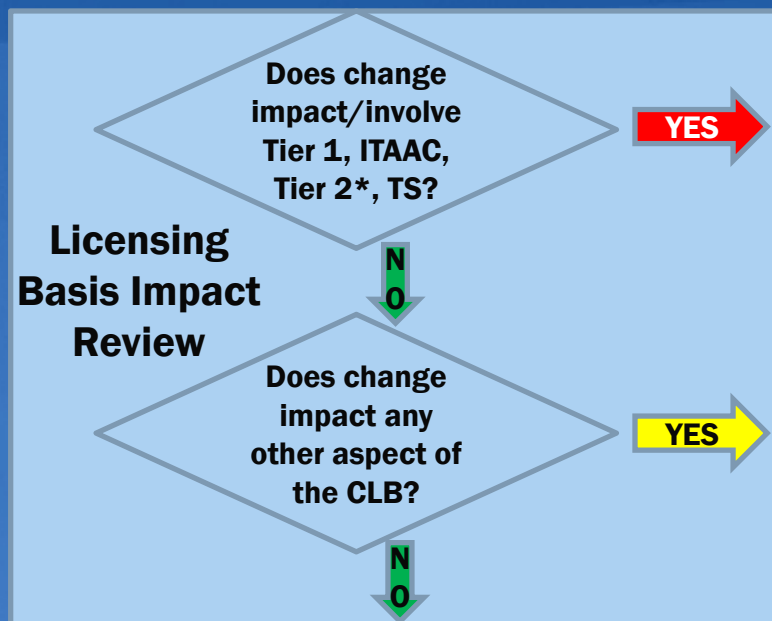
- **Previously Identified**
 - Issue identified and scheduled in construction schedule
 - Engineering and Licensing reviews complete prior to work in the field
- **Emergent**
 - Engineering determination is complete prior to work in the field: Licensing Impact Review performed
 - Circumstances may necessitate that construction proceed while the Licensing Change/Departure is completed and documented
- **No difference in licensing review outcome**
 - As-built configuration and CLB will agree
- **No difference in final updated CLB as a result of the timing of discovery and construction**

Attributes of Proposed Emergent Change Process

- **Proper balance between change control & flexibility**
- **Integration of design and licensing considerations**
- **Configuration management and transparency for inspectors & licensees**
- **Workable and sustainable for construction environment**
- **Consistent with NRC requirements and policy**

Licensee and NRC Awareness Licensing Impact Review

- Performed by responsible engineering organization
- Coordinated with engineering disposition
- Designed to provide awareness for emergent issues



Submit PAR/LAR

- Perform Change/Departure Review
- At licensee option, construction may proceed at-risk
- Licensee and NRC awareness of at-risk construction

Controlled
under App. B
Design Control

Change/Departure Review

- **Performed by personnel with additional training (e.g., Licensing or Engineering)**
- **Performed in accordance with NEI 96-07, App. C**
 - **Screen (Simplified Evaluation)**
 - **Full evaluation, if necessary**
 - **Licensing basis change package**
 - **Timely completion of departure determination**
 - **Construction stops at any point a PAR/LAR is determined to be required**

Need for Proposed Process

- **Avoid unnecessary construction schedule delays**
- **FSAR contains extensive detail given the approved-not-certified nature of Tier 2 information**
 - **Changes of low or no safety significance**
 - **Precise dimensions/Lack of tolerances on figures**
 - **“Typical” configurations**
 - **Conservative licensing decision-making by engineers**
- **Verbatim compliance with FSAR is a challenge in a dynamic construction environment**
 - **Problematic if construction progress is not allowed while licensing basis is changed**
- **Flexibility needed to construct large, complex projects**
 - **High volume of less significant (e.g., Tier 2) changes expected**

Complete Licensing Change Package

- Issue Identified
- When the licensing basis is impacted the issue is put in special classification and reviewed for impact to the standard plant/fleet
- Board reviews/approves changes
- Licensing package is developed with reviews by Engineering and Licensees
- Changes are then incorporated into Licensee's process for approval and incorporation into licensing basis.



Consistent with NRC Regulations and Policy

- **Allowing flexibility to procure and construct is a basic Part 52 principle [SRM 90-377]**
- **NRC regulations do not preclude the proposed emergent change process**
- **Regulatory guidance can provide an acceptable approach to meet the regulations**
 - **ISG-25**
 - **NEI 96-07, Appendix C**

Part 52 Principles

- **Up front resolution of issues via design certification and COL**
- **Change control process that provides standardization with flexibility for licensees to construct the facility [SRM 90-377]**
- **ITAAC verify that the plant is constructed in accordance with the COL**

10 CFR 52.99(b)

(b) Licensee and applicant conduct of activities subject to ITAAC. With respect to activities subject to an ITAAC, an applicant for a combined license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any one of the prescribed acceptance criteria are met.

LES Precedent

- **LES made similar request to allow evaluations be pursued while construction continues – Oct 16, 2009 ML093090657**
- **NRC clarified to LES that construction activities can proceed “at risk” and stated that operations cannot commence until NRC approval – Sept 27, 2012 ML 12255A032**
- **NRC requested schedule information and change information for inspectors similar to our proposal to make inspectors aware of emergent change process**
- **We believe this informs the emergent change process issue under Part 52**

Emergent Change Process is Transparent

- **Process assures licensee awareness of pending LB change and responsibility for conformity of the as-built facility and the license**
- **Process provides mechanism for assuring visibility to NRC inspectors**
- **Process provides configuration control**
 - **Visibility of pending LB changes**
 - **Documents of scope of construction at-risk**

Proper Balance Between Change Control and Flexibility

- **Process assures systematic review of changes/departures while providing the flexibility necessary to construct the plant**
 - **Assures as-built facility will be constructed and will operate in conformity with the license [10 CFR 52.97(a)(1)(iii)]**
 - **No adverse impact on safety or quality**
 - **Avoids unnecessary interruption of construction**

Proposed Emergent Change Process is Workable and Sustainable

- Promotes disciplined and thorough licensing evaluation
- Process removes licensing basis update from critical path
 - Reduces scheduling pressures on licensing evaluations
- Process minimizes disruption in construction work flow

Conclusion

- **A more efficient process is needed to handle emergent changes during construction**
- **The industry's proposed guidance is consistent with NRC requirements and policy and assures conformance of the as-built facility and CLB**
- **Endorsement proposed through NEI 96-07, Appendix C**
- **Proposed guidance/process enhancements ensure licensee and NRC awareness of pending LB changes**