Edwin I. Hatch Nuclear Plant – Units 1 & 2
Pre-Application Meeting

Attachment 1 to NL-25-0270
SNC Pre-application meeting July 17, 2025 (Public, non-proprietary)

Southern Nuclear

Combined License Amendment Request (LAR) for Extended Power Uprate (EPU) and Maximum Extended Load Line Limit Analysis Plus (MELLLA+) for the Edwin I. Hatch Nuclear Plant Unit 1 and Unit 2

July 17, 2025

Agenda

- Purpose
- Need for a Combined LAR
- Schedule
- Precedents
- Guidance
- Documentation
- Licensing Strategy

PURPOSE

EPU

To Meet Increasing Power Demands in Georgia with Reliable Clean Energy:

Proposed increased licensed power level from 2804 MWth of 2960 MWt, which is an increase of 5.6% from CLTP or 121.5% of the OLTP.

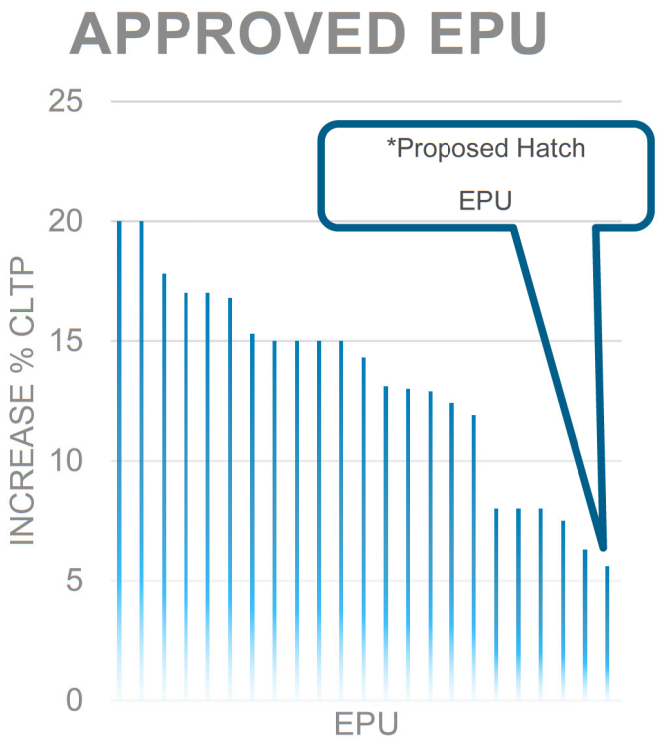
MELLLA+

To Improve Operating Flexibility at Extended Power Uprate Levels:

Allow operations in the MELLLA+ domain to provide maximum operations flexibility. At 121.5% OLTP, MELLLA+ will allow a core flow window range similar to the currently licensed MELLLA domain.

Combined LAR to Support Efficient Licensing Strategy

To Gain Efficiency in the Development, Review, and Implementation of the LAR:



Data from Approved Applications For Power Uprates | NRC.gov

Need for Combined LAR Strategy for EPU and MELLLA+

Separate LARs Challenges:

- MELLLA+ & EPU overlaps lead to inefficient duplicated technical reviews if submitted sequentially.
- If submitted for parallel review, linked submittals will complicate the technical review and lead to inefficiencies.

Need for Review Efficiency:

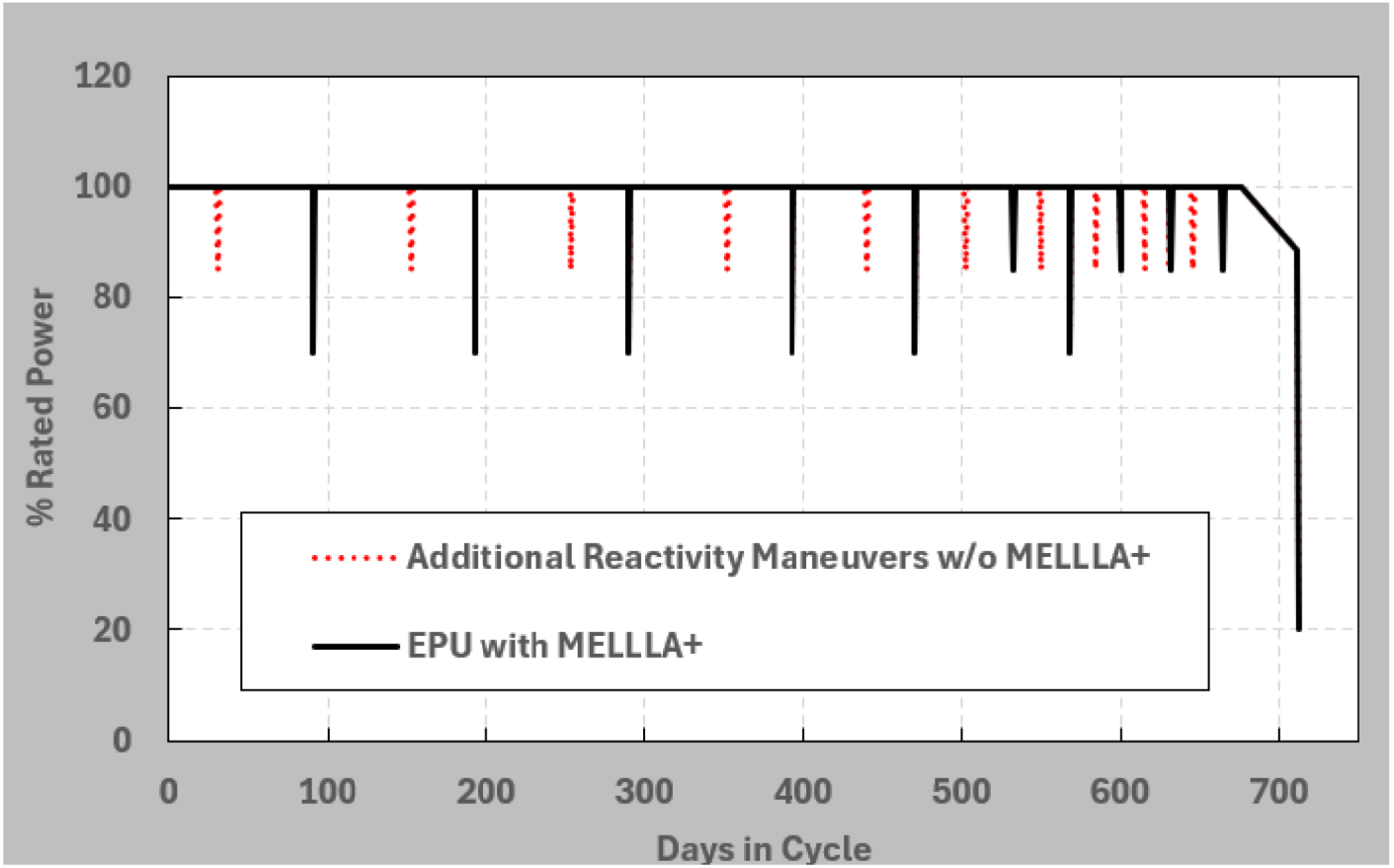
- Essential for meeting schedule demands aligned with power needs and fuel fabrication lead time.

Combined LAR Benefits:

- Streamlines NRC resource use and supports similar future industry submissions.
- Minimizes operator impact by preventing loss of operational flexibility and reducing reactivity management maneuvers upon EPU implementation.
- Simplifies site implementation of physical mods and procedure updates, especially in areas affected by both EPU and MELLLA+.

Criteria	2 Separate LARS	Combined LAR
Review Efficiency	Lower	Higher
Complexity	Lower for sequential	Higher
Operator Impact	Higher	Lower
Site Implementation	More complex	Simpler

Combined LAR Allows Reduced Reactivity Maneuvers



SCHEDULE

- Hatch Subsequent License Renewal: Estimated Decision 2nd Quarter 2026
- Hatch EPU/MELLLA+ LAR: Estimated Submittal 2nd Quarter 2027
- Hatch EPU/MELLLA+ LAR: Requested NRC Approval 2nd Quarter 2028
- Expected Power Ascension:
  - Unit 2 – 1st Quarter 2029
  - Unit 1 – 1st Quarter 2030

Power Uprate Licensing Precedents

- Hatch Power Uprate Background:
  - 1995 Stretch Power Uprate (SPU): increase of 5% CLTP, 105.0% OLTP
  - 1998 Extended Power Uprate (EPU) increase of 8% CLTP, 113.4% OLTP
  - 2003 Measurement Uncertainty Recapture Uprate (MUR) 1.5% of CLTP, 115.1% OLTP
  - Proposed 2027 EPU 5.6% CLTP, 121.5% OLTP (retaining MUR at the proposed EPU power level)

- Peach Bottom: 1994 SPU (5% CLTP); 2002 MUR (1.6% CLTP); 2014 EPU (12.4% CLTP); 2017 MELLLA+; 2017 MUR (1.66% CLTP)

- Browns Ferry: 2017 EPU (14.3% CLTP); 2019 MELLLA+

- Brunswick: 2002 EPU (15% CLTP); 2018 MELLLA+

GUIDANCE

- NRC Review Standard RS-001 (2003)
- LIC-112 Power Uprate Process
- GE Nuclear Energy, “Constant Pressure Power Uprate,” NEDC-33004P-A, Revision 4, July 2003
- GE Hitachi Nuclear Energy, “General Electric Boiling Water Reactor Maximum Extended Load Line Limit Analysis Plus,” NEDC-33006P-A, Revision 3, June 2009
- GE Nuclear Energy, “Generic Guidelines and Evaluations for General Electric Boiling Water Reactor Thermal Power Optimization,” NEDC-32938P-A, Revision 2, May 2003
- GE Hitachi, “Boiling Water Reactor Detect and Suppress Solution-Confirmation Density,” NEDC-33075P-A, Revision 8, November 2013
- NEI 08-10 Roadmap for Power Uprate Program Development
- NEI 06-02 License Amendment Request Guidelines

CHANGES TO THE PLANT

- Steam Dryer Replacement
- Power Range Neutron Monitoring System Modifications
- High Pressure Turbine Generator Upgrades
- Balance-of-Plant System and Component Upgrades

DOCUMENTATION

- GEH Combined Safety Analysis Report*
- Operating License / Technical Specifications Changes
- FSAR Changes
- Grid Stability Assessment
- Risk Assessment
- Environmental Assessment

*as discussed during closed meeting June 26, 2025 (ADAMS Accession No. ML25153A482)

STRATEGY

- Capture lessons learned from precedent EPU and MELLLA+ LARs, approved topical reports
- Use industry peer input for consistency
- Continue NRC engagements to support a 2027 submittal and an efficient review
- Utilize audits for confirmatory analyses, areas of significance
- Leverage NRC Power Uprate review efficiency strategy

Questions?

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Attachment 2 to NL-25-0270
GE Replacement Steam Dryer presentation redacted (Public, non-proprietary)