Seabrook Station, Unit No. 1

Alkali-Silica Reaction (ASR) License Amendment Request (LAR) and License Renewal Application (LRA)

Public Meeting

February 13, 2019
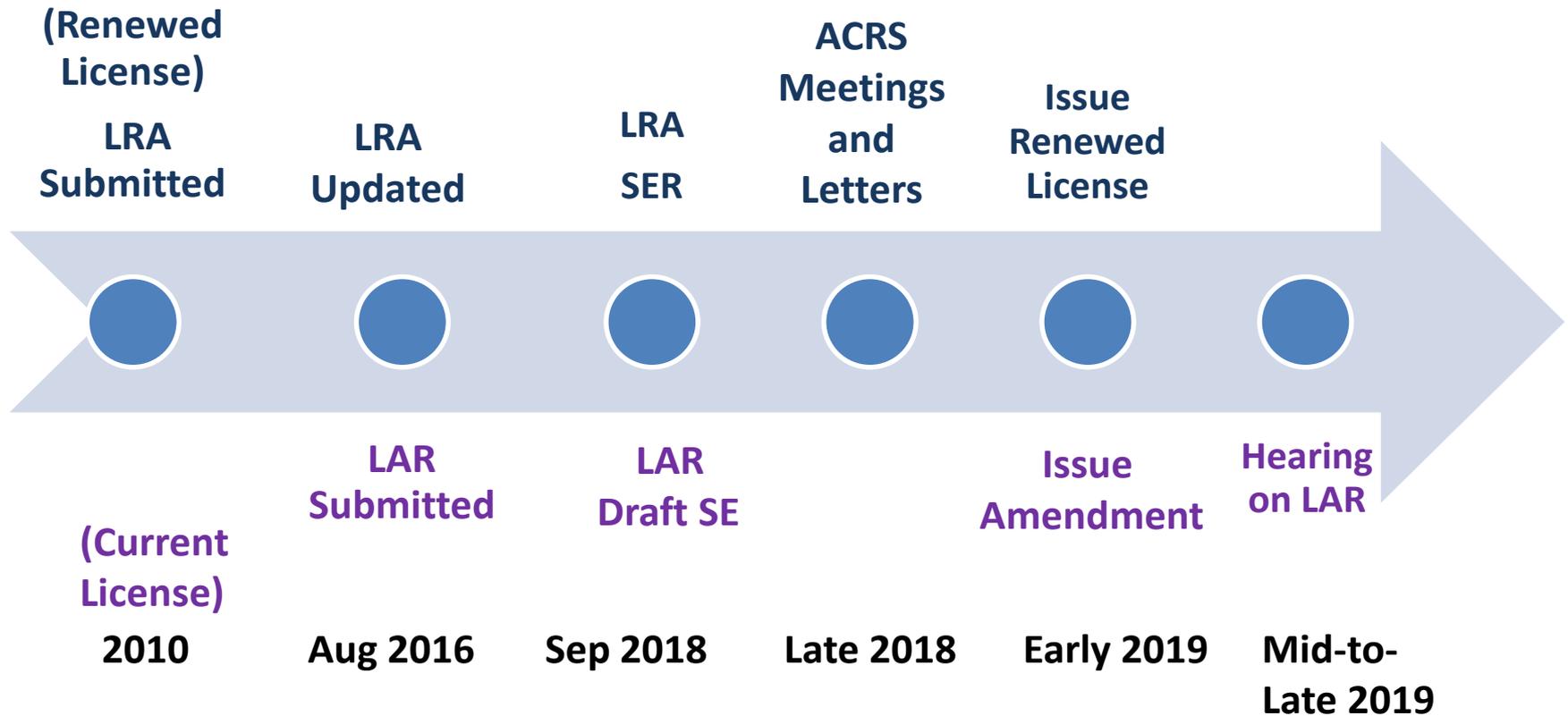
Agenda

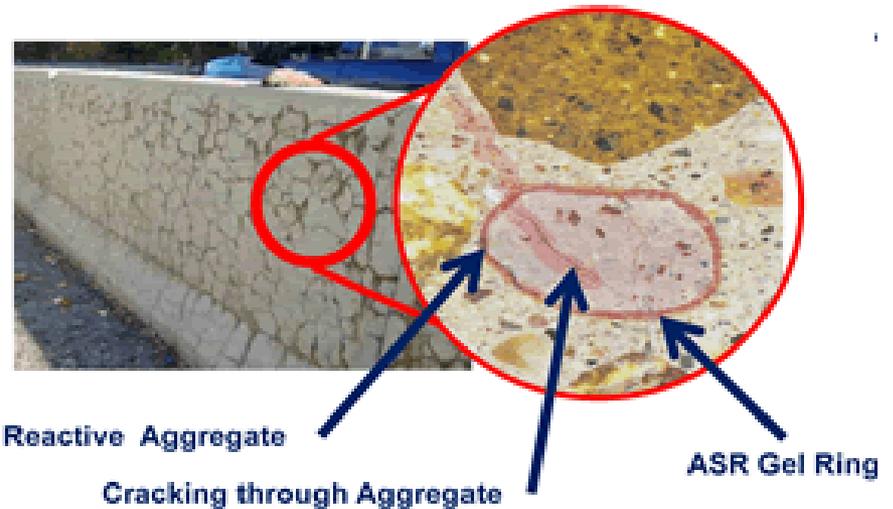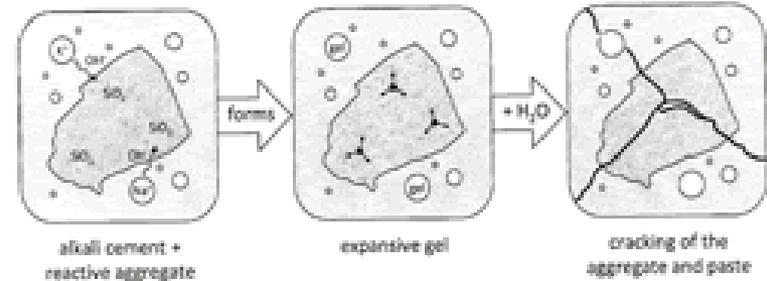- Status of NRC Activities

- Alkali Silica Reaction

- Next Actions

- Discussion

- Closing Remarks

- Adjourn

Licensing Timeline

(Renewed License)

LRA Submitted	LRA Updated	LRA SER	ACRS Meetings and Letters	Issue Renewed License	

	LAR Submitted	LAR Draft SE		Issue Amendment	Hearing on LAR

(Current License)

2010	Aug 2016	Sep 2018	Late 2018	Early 2019	Mid-to-Late 2019

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ASR

- ASR is a slow expansive chemical reaction in hardened concrete, which occurs in the presence of water, between the alkaline cement and reactive silica found in some aggregates.

- The expansion can cause various material impacts

- ASR is a very slow moving phenomenon

alkali cement + reactive aggregate → forms → expansive gel → + H₂O → cracking of the aggregate and paste

Reactive Aggregate

Cracking through Aggregate

ASR Gel Ring

ASR at Seabrook

- Indications of ASR identified in 2010
  - NRC has continued to verify safe operation at Seabrook
  - ASR progresses slowly
- Original license did not consider ASR
- LAR and LRA would address ASR for the current license and renewed license terms

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ASR License Amendment Request

- Detailed methodology for evaluating ASR-affected structures

- Based on large-scale testing program

- Monitoring ensures timely corrective action

License Renewal Application

- Aging management programs (AMPs) identify and manage future effects of aging

- LRA supplemented to include ASR Monitoring Programs as AMPs

- ASR AMPs adequately manage the effects of aging due to ASR

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Issuance of the Licensing Actions

- Planned early 2019

- Meet the NRC's safety regulations

- NRC will adopt any required changes that result from the hearing process

Publicly Available Documents

- Available at https://adams.nrc.gov/wba/
- ASR license amendment request
  - NRC staff draft safety evaluation: ML18226A205
  - ACRS letter: ML18348A951
- License renewal application
  - NRC staff safety evaluation report: ML18362A370
  - ACRS letter: ML18353A954
- Information on Concrete Degradation
  - https://www.nrc.gov/reactors/operating/ops-experience.html
- Seabrook License Renewal
  - https://www.nrc.gov/reactors/operating/licensing/renewal/applications.html

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