

## ArevaEPRDCDocsPEm Resource

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**Sent:** Tuesday, September 09, 2014 10:53 AM  
**To:** ArevaEPRDCDocsPEm Resource  
**Subject:** FW: presentation material for 9/10 public meeting  
**Attachments:** Presentation - U.S. EPR FSAR Group B Chapter Closure Plans - 9-10-2014.pdf

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**From:** HOTTLE Nathan (AREVA) [<mailto:Nathan.Hottle@areva.com>]  
**Sent:** Friday, September 05, 2014 4:10 PM  
**To:** Wunder, George  
**Cc:** GUCWA Len (EXTERNAL AREVA); RANSOM Jim (AREVA); MORENO Edgar (AREVA); STACK Tim (AREVA); SEALS Jeff (AREVA); Eudy, Michael  
**Subject:** presentation material for 9/10 public meeting

George – Attached is the presentation we plan to use next Wednesday. Please note that we've added Chapter 18 to the discussion for 2015.

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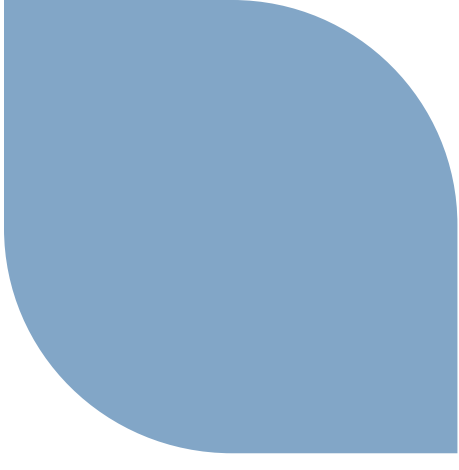
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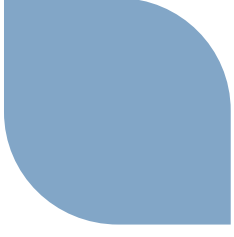
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# **U.S. EPR – FSAR Group B Chapter Closure Plans (2015)**

**AREVA/NRC Meeting  
Rockville, MD  
September 10, 2014**

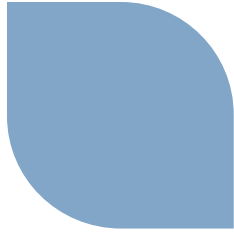




# Agenda

- ▶ **Introductions**
- ▶ **Meeting purpose and desired outcome**
- ▶ **FSAR closure process**
- ▶ **FSAR Group A status**
- ▶ **FSAR Group B closure plans – 2015**
- ▶ **FSAR Group C closure plans**
- ▶ **Summary and next steps**

# Meeting Purpose and Desired Outcome



## ▶ Meeting purpose

- ◆ Provide updated plans for FSAR Group B chapter closure in CY2015
  - Schedule of AREVA submittals and meetings in CY2015
  - FSAR Group B redefined to chapters AREVA plans to close in CY2015

## ▶ Desired outcome

- ◆ AREVA and NRC agree on chapter closure commitments and path to Advanced SERs for Group B chapters
  - AREVA and NRC have sufficient information to plan CY2015 support for U.S. EPR DC project
  - AREVA to document plans in revised FSAR closure plan letter and NRC workslope letter



## **U.S. EPR FSAR Closure Process**

- ▶ **Series of project planning meetings in late 2013 and early 2014**
  - ◆ **Shifted project execution to focus on FSAR chapter closures**
  - ◆ **Grouped FSAR chapters into three groups based on readiness for closure**
  - ◆ **Reviewed remaining activities (RAIs, technical reports, audits, major FSAR changes) in each chapter and provided submittal schedules**
  - ◆ **Results documented in closure plan letters and NRC workscope letter**



## FSAR Group A Status

- ▶ **FSAR Group A identified for completion in FY2014**
  - ◆ Six FSAR chapters and aircraft impact assessment
- ▶ **AREVA submitted letters to declare FSAR chapter closure and to provide final FSAR changes**
- ▶ **Aug. 6, 2014 NRC letter affirms plans for Advanced SERs on all Group A chapters by Sep. 30, 2014**
- ▶ **ACRS meetings on Group A chapters expected in early 2015**
  - ◆ AREVA views timely completion of ACRS meetings as a critical step toward certification
  - ◆ Discuss process for scheduling ACRS in Feb. 2015



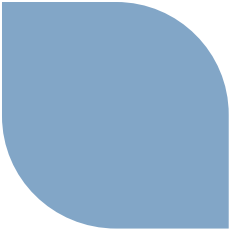
## **FSAR Group A Lessons Learned**

- ▶ **Organizing work around chapter closures and implementing a chapter freeze process are effective in advancing project at this stage**
- ▶ **Completeness and accuracy of submittals is highest priority**
- ▶ **Early and frequent engagement on FSAR changes and technical issues is important to support schedule. Public meetings and telecons allow for more efficient communications.**
- ▶ **Issues that cross technical branches (cross-cutting) require early attention and frequent communication**
- ▶ **Clear communication of FSAR closure and review status improves efficiency**
- ▶ **AREVA closure required no later than June to support fiscal year Advanced SERs**



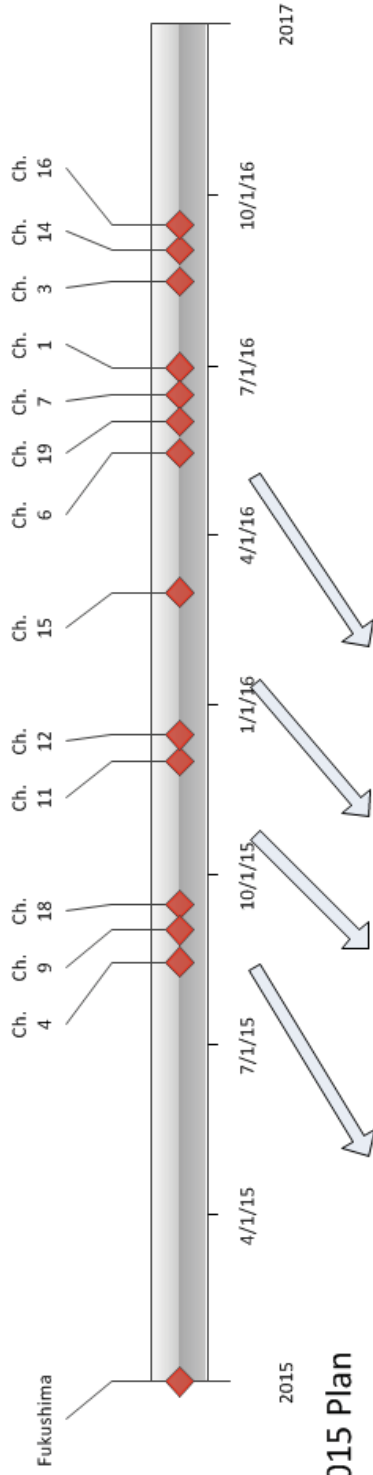
# FSAR Group B/C Status

- ▶ **Mar. 20, 2014 closure plan letter**
  - ◆ Identified dates for RAI responses, report submittals, audits, and meetings
  - ◆ Group B/C activities primarily in 2015 and 2016
- ▶ **AREVA is proceeding internally with Group B/C work in 2014**
  - ◆ Fukushima
  - ◆ Building critical sections
  - ◆ Fuel seismic
  - ◆ Digital I&C
  - ◆ Severe accidents
  - ◆ SPND
- ▶ **AREVA is accelerating chapter closures in CY2015**
  - ◆ Chapters 4, 6, 9, 11, 12, 15, 18, Fukushima
  - ◆ Revised closure plan letter to be submitted by Sep. 30, 2014

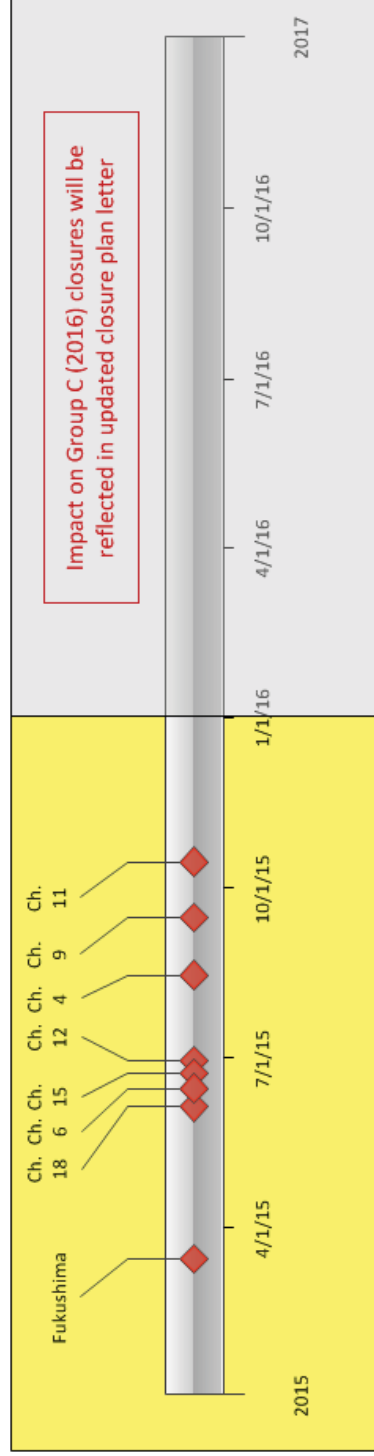


# Chapter Acceleration into CY2015

Current Plan (Mar. 20, 2014 letter)



Revised 2015 Plan



\* Dates represent AREVA submittal of final FSAR chapter closure package



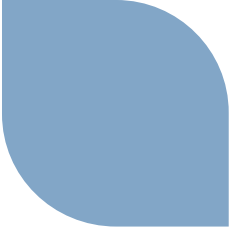
# FSAR Group B Plans

## ▶ AREVA will continue the chapter closure model applied to Group A with incorporation of lessons learned

- ◆ In addition to identified submittals, FSAR changes in Group B chapters since FSAR Rev. 5 will be presented and justified, followed by formal submittal of final FSAR chapter markups
- ◆ Anticipate timing of FSAR Rev. 8 to close confirmatory items for Advanced SERs in FY2015
- ◆ Anticipate more NRC engagement on Group C chapters in CY2015 to support early chapter closures in CY2016

## ▶ Planning inputs and assumptions

- ◆ FSAR chapter closure requires NRC confirmation that all issues have been resolved to support Advanced SER.
- ◆ Advanced SERs can be issued within 3 months of chapter closure by AREVA. The proposed plan will support five (5) SERs in FY2015 (Fukushima, Ch. 6, Ch. 12, Ch. 15, Ch. 18).
- ◆ Group B chapter closure is not prevented by cross-cutting issues in Group C chapters. Where cross-cutting issues exist, AREVA will justify why the Group B chapter can be closed and frozen.
- ◆ Complete and accurate submittals and frequent communications will curtail new RALs. Any new RALs will receive highest priority to support chapter closure goals.
- ◆ No future regulatory guidance or review standards will be applied to the U.S. EPR.

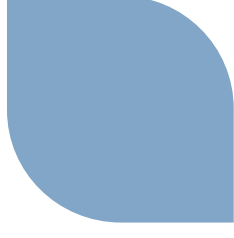


# Key Technical Issues

Closed	CY2015 Closure	CY2016 Closure
NAB II/I approach	Design specifications (Ch. 3)	Seismic / Structural (Ch. 3)
ATWS	Severe accidents (Ch. 19)	Seismic margin analysis (Ch. 3, 19)
SBLOCA boron dilution	Fuel seismic (Ch. 4)	Digital I&C (Ch. 7)
Blast wave effects	GSI-191 (Ch. 6, 15)	I&C Tech Specs (Ch. 7, 16)
Aircraft impact assessment	SPND failures (Ch. 4, 7, 15)	Updated PRA (Ch. 19)
Byron event	Spent fuel cask transfer facility (Ch. 9)	
	Fukushima (Ch. 19)	
	Radiological (Ch. 9, 11, 12, 14)	

\* Chapter designations are primary interfaces, not necessarily an exhaustive list

# FSAR Group B Chapter Summaries



- ▶ **For each chapter**
  - ◆ **Identify major workscope**
  - ◆ **Identify key technical issues and cross-cutting issues**
    - Recommendations for implementation plan meetings
  - ◆ **Other items of note**
  - ◆ **Update to chapter closure plan, including schedule of submittals**
    - Scope based on 2013/2014 closure plan meetings
    - Final commitment dates will be documented in closure plan letter

The following chapter summaries are not meant to be an exhaustive list of required FSAR changes. The purpose is to identify the primary schedule drivers to establish closure dates. It is acknowledged that additional FSAR changes will be required, either as a result of existing open items or as a result of chapter closure readiness reviews. AREVA's chapter freeze process will provide assurance that all necessary FSAR changes are implemented prior to chapter closure and all open action items (e.g., meetings, audits, ACRS) are addressed.



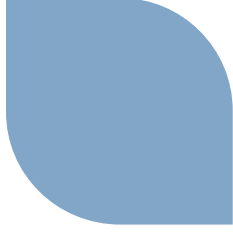
# Fukushima

- ▶ **Major workscope**
  - ◆ Finalize RAI responses and technical report revisions related to ELAP mitigation strategy, including S-RELAP5 audit findings
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ Fukushima
    - Recommend a post-submittal meeting to walk through changes to the technical report.
  - ◆ Open issues in other FSAR chapters are not expected to impact the design or analysis supporting the ELAP mitigation strategy and thus should not prevent closure of Fukushima-related activities.
- ▶ **Other items of note**
  - ◆ Schedule delay due, in part, to S-RELAP5 audit findings. Final RAI responses and technical report revision will be submitted by November 21, 2014.
  - ◆ Closure plan assumes no impact from ongoing rulemaking activities.

# Fukushima – Closure Plan Update

- ▶ **Issue: Fukushima**
  - ◆ **RAI response submittals – November 21, 2014**
    - RAI 563 Q19-356
    - RAI 598 Q06.02.01-106
    - RAI 623 Q19.02-1 through 4
    - RAI 624 Q19-372
    - RAI 626 Q06.03-19
      - Response submitted 5/5/14. AREVA requests confirmation of RAI closure.
  - ◆ **ANP-10329 Rev. 1 (ELAP) – November 21, 2014**
  - ◆ **Audits**
    - S-RELAP5 ELAP analysis – Audit findings documented in the audit report. Closure will require ANP-10329 revisions and additional ERR audits – **November / December 2014**
    - Fuel pool time-to-boil – Revised calculation to be presented in ANP-10329 Rev.1.
    - GOTHIC containment analysis – **November / December 2014**
  - ◆ **Post-submittal meeting – December 2014**
    - Present changes to mitigation strategy and results
- ▶ **FSAR closure package – March 2015**
- ▶ **Advanced SER – June 2015**

# Chapter 6 – Engineered Safety Features



- ▶ **Major workscope**
  - ◆ Resolve GSI-191 ACRS meeting actions and ECCS NPSH
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ **GSI-191 / ECCS NPSH**
    - GSI-191 debris blockage and long-term core cooling is primarily addressed in Chapters 6 and 15. Full scope of GSI-191 to be resolved in FY2015.
    - ACRS meeting actions and resolution path
    - Recommend a technical meeting to discuss GSI-191 implementation plan
  - ◆ **Fukushima**
    - Design interfaces are reflected in Chapter 6. Fukushima modifications will be finalized to support Chapter 6 closure.
  - ◆ **Severe accidents**
    - RAI 597 Q06.02.05-35 is concerned with equipment survivability during a severe accident
- ▶ **Other items of note**
  - ◆ **Open issue – confirmation of bounding LOCA scenarios for containment mass and energy release**
  - ◆ **Resolve NS-AQ definition for severe accident equipment**
  - ◆ **Discussion points: ACRS engagement, separate SER for GSI-191**



# Chapter 6 – Closure Plan Update

- ▶ **Issue: GSI-191 / NPSH**
  - ◆ **RAI response submittals – December 12, 2014**
    - RAI 553 Q06.03-18
    - RAI 524 Q06.02.02-127 – conforming changes as necessary
    - RAI 475 Q06.02.02-86,87 – conforming changes as necessary
    - RAI 340 Q06.02.01-57 – conforming changes as necessary
  - ◆ **NPSH audit (ERR) – January 2015**
  - ◆ **Technical meeting – November 2014**
    - Discuss proposed resolution of remaining GSI-191 issues
  - ◆ **ANP-10293P Rev. 5 (GSI-191) – April 3, 2015**
- ▶ **Issue: Severe accidents**
  - ◆ **RAI 597 Q06.02.05-35 – January 16, 2015**
- ▶ **Issue: Fukushima**
  - ◆ **Covered separately (RAI 598 Q06.02.01-106, RAI 626 Q06.03-19)**
- ▶ **FSAR closure package – June 2015**
- ▶ **Advanced SER – September 2015**

# Chapter 15 – Accident Analyses

- ▶ **Major workscope**
  - ◆ Resolve GSI-191 ACRS meeting actions
  - ◆ RLBLOCA reanalysis to address cumulation of changes in 50.46 reports
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ **GSI-191**
    - GSI-191 debris blockage and long-term core cooling is primarily addressed in Chapters 6 and 15. Full scope of GSI-191 to be resolved in FY2015.
    - Recommend a face-to-face technical meeting to discuss GSI-191 implementation plan and a follow-up meeting to discuss results prior to ANP-10293P submittal.
  - ◆ **SPND setpoint methodology (ANP-10287P)**
    - Topical report approval required to support Chapter 15 closure. Final revision submitted August 6, 2014 pending November audit.

# Chapter 15 – Accident Analyses

- ▶ **Key technical issues and cross-cutting issues (cont'd)**
  - ◆ **Digital I&C**
    - Prior to Chapter 15 closure, AREVA will justify that digital I&C issue resolution does not impact Chapter 15.
  - ◆ **Tech Specs**
    - Prior to Chapter 15 closure, AREVA will justify that remaining work on Tech Specs does not impact Chapter 15.
- ▶ **Other items of note**
  - ◆ **Required ACRS meeting on long-term core cooling (post-closure)**
  - ◆ **10CFR50.46c proposed rule (performance-based ECCS requirements)**
    - Proposed rule would not impact U.S. EPR design certification. Compliance would be required by COL holder no later than completion of the first refueling outage after initial fuel load).

# Chapter 15 – Closure Plan Update

- ▶ **Issue: GSI-191**
  - ◆ **Technical meeting – November 2014 (See Ch. 6)**
    - Discuss proposed resolution of remaining GSI-191 issues
    - Follow-up meeting to discuss analysis results prior to RAI 573 response submittal
  - ◆ **RAI response submittals – April 3, 2015**
    - RAI 573 Q15.6.5-116
    - Conforming changes to RAI 191, 362, 428, 493 as necessary
  - ◆ **ANP-10293P Rev. 5 (GSI-191) – April 3, 2015 (See Ch. 6)**
- ▶ **Issue: SPND**
  - ◆ **ANP-10287P Rev. 2 (incore trip setpoints) – Submitted August 6, 2014**
    - Topical report approval to support Chapter 15 closure
  - ◆ **SPND Audit (Lynchburg) – November 4-7, 2014**
- ▶ **Remaining Open Items**
  - ◆ **RLBLOCA reanalysis – December 19, 2014**
- ▶ **FSAR closure package – June 2015**
- ▶ **Advanced SER – September 2015**

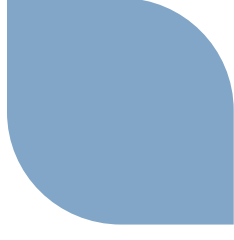
# Chapter 12 – Radiation Protection

- ▶ **Major workscope**
  - ◆ Resolve 2013 NRC audit issues regarding source terms and address comments on RAI 539 Q12.03-12.04-29 advanced response
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ **Radiological issues**
    - 2013 audit of source term and shielding calculations identified concerns with design configuration control
    - AREVA is performing a detailed V&V of inputs supporting FSAR Chapters 11 and 12 to resolve inconsistencies
    - Recommend NRC audit once V&V activities are complete
  - ◆ **Spent fuel cask transfer facility**
    - Chapter 9 RAI 622 Q09.01.04-43 relates to radiation zones around cask transfer facility. AREVA will resolve radiation zone issues prior to closure of Chapter 12.
- ▶ **Other items of note**
  - ◆ Resolve comments from FSAR Rev. 5 meeting in August 2013

# Chapter 12 – Closure Plan Update

- ▶ **Issue: Radiological**
- ◆ **NRC follow-up / continuation audit – November/December 2014**
  - Discuss FSAR Section 12.2 and supporting V&V, comments from July 2013 audit, and source term issues in support of shielding calculations and RAI 539 response
- ◆ **RAI response submittals**
  - RAI 616 Q12.03-35 – **January 8, 2015**
  - RAI 539 Q12.03-12.04-29 – will address remaining issues from RAI 554 Q11.02-27 and RAI 301 Q11.02-17 – **February 25, 2015**
  - RAI 548 Q12.03-12.04-31 – reconcile with RAI 539 – **February 25, 2015**
  - RAI 599 Q12.03-34 – **February 25, 2015**
  - RAI 627 Q12.02-7 – **April 17, 2015**
  - RAI 593 Q12.03-12.04-33 – **April 17, 2015**
  - RAI 529 Q12.03-12.04-28 – **April 17, 2015**
- ▶ **FSAR closure package – June 2015**
- ▶ **Advanced SER – September 2015**

# Chapter 18 – Human Factors Engineering



- ▶ **Major workscope**
  - ◆ Resolve remaining RAIs and updates to HFE program implementation plans
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ Digital I&C
    - AREVA believes that the Chapter 18 HFE program can be decoupled from the resolution of digital I&C issues with minor changes, allowing Chapter 18 to proceed to closure.
- ▶ **Other items of note**
  - ◆ Tier 2\* designations in Chapter 18 for HFE program implementation plans need to be evaluated and revised as necessary based on current Tier 2\* direction



## Chapter 18 – Closure Plan Update

- ▶ **Remaining open items**
  - ◆ Revised implementation plans – April 2, 2015
  - ◆ RAI response submittals – April 2, 2015
    - RAI 586 Q18-240
    - RAI 586 Q18-241
    - RAI 617 Q18-242
- ▶ **FSAR closure package – June 2015**
- ▶ **Advanced SER – September 2015**



# Chapter 4 - Reactor

- ▶ **Major workslope**
  - ◆ Update fuel assembly faulted analyses and submit RAI 600 response and report revisions
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ **Fuel seismic**
    - Recommend a face-to-face technical meeting in November 2014 to discuss revisions to fuel assembly structural analyses and testing results
  - ◆ **Ch. 3 seismic motion**
    - Prior to Chapter 4 closure, AREVA will justify that seismic input from structures is frozen and will not change.
  - ◆ **Tech Specs 3.2**
    - Improved technical basis for axial offset LCO and removal of azimuthal power imbalance LCO will result in minor changes to Chapter 4
    - Recommend a face-to-face technical meeting in October/November 2014 to discuss changes to Tech Specs and Bases
  - ◆ **SPND setpoint methodology (ANP-10287P)**
    - Topical report approval required to support Chapter 4 closure. Final revision submitted August 6, 2014 pending November audit. November audit also addresses RAI 544 Q04.04-67 response.
- ▶ **Other items of note**
  - ◆ ANP-10285P (Fuel assembly mechanical design topical report) requires approval to support Chapter 4 closure, pending resolution of RAI 600 and seismic reconciliation.
  - ◆ Discussion point: timing of safety evaluations on topical reports and FSAR Ch. 4

# Chapter 4 – Closure Plan Update

- ▶ **Issue: Fuel seismic**
  - ◆ **Technical meeting – November 2014**
    - Present changes to fuel assembly faulted analyses
  - ◆ **RAI 600 Q04.02-19 response – May 29, 2015**
  - ◆ **ANP-10325P Rev. 1 (faulted analysis) – May 29, 2015**
  - ◆ **ANP-10285P Rev. 2 (FA mechanical design) – May 29, 2015**
- ▶ **Issue: SPND**
  - ◆ **ANP-10287P Rev. 2 (incore trip setpoints) – Submitted August 6, 2014**
    - Topical report approval to support Chapter 4 closure
  - ◆ **SPND Audit (Lynchburg) – November 4-7, 2014**
    - Audit also addresses RAI 544 Q04.04-67 response
- ▶ **Issue: Tech Specs**
  - ◆ **Technical meeting – October/November 2014**
    - Present plans for AO (3.2.4) and AZI (3.2.5) LCO
  - ◆ **AO/AZI FSAR/Tech Spec changes – January 16, 2015**
- ▶ **FSAR closure package – August 2015**
- ▶ **Advanced SER – November 2015**

# Chapter 9 – Auxiliary Systems

- ▶ **Major workscope**
  - ◆ Resolution of remaining issues with spent fuel cask transfer facility, ventilation system design
  - ◆ Post-fire safe shutdown analysis validation
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ **Spent fuel cask transfer facility**
    - Outstanding issues documented in RAIs and audit plan to address potential for spent fuel pool drainage
    - Radiation zones around SFCTF impact Chapter 12 (RAI 622)
  - ◆ **Post-fire safe shutdown analysis**
    - During closure of FSAR Chapter 8, question arose as to whether power supplies were sufficient for all post-fire safe shutdown scenarios. Broader investigation and validation of post-fire safe shutdown adequacy is underway.
    - Statements in Phase 2 ACRS meeting and in RAI responses may have misrepresented the completion status of the post-fire safe shutdown analysis. A design certification-level post-fire SSA will validate or reconcile FSAR statements and previous RAI responses.
    - Recommend technical meeting if validation results in changes to post-fire safe shutdown equipment

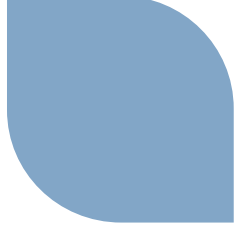
# Chapter 9 – Auxiliary Systems

- ▶ **Key technical issues and cross-cutting issues (cont'd)**
  - ◆ **Radiological**
    - RAI 625 Q11.05-29 addresses, in part, inconsistencies between Chapter 9 and Chapter 11 (radiation monitors). Resolution of Chapter 9 issues required prior to Chapter 9 closure.
    - Radiation zones around SFCTF (RAI 622)
- ▶ **Other items of note**
  - ◆ **New and spent fuel rack design is described in Chapter 9 through reference to Transnuclear design report. Outstanding issue with the fuel rack design relates to the seismic analysis, covered under SRP 3.8.4. AREVA proposes that Chapter 9 can be closed prior to final resolution of fuel rack seismic analysis.**
  - ◆ **Resolve comments from FSAR Rev. 5 meeting in August 2013**

# Chapter 9 – Closure Plan Update

- ▶ **Issue: Spent fuel cask transfer facility**
  - ◆ SFCTF audit – **February 2015**
  - ◆ RAI response submittals
    - RAI 628 Q09.01.04-44 – **March 27, 2015**
    - RAI 622 Q09.01.04-43 – **April 17, 2015**
    - RAI 620 Q09.01.05-25 – **April 24, 2015**
    - RAI 621 Q09.01.04-42 – **May 7, 2015**
    - RAI 595 Q09.01.02-42 – **June 1, 2015**
  
- ▶ **Issue: post-fire safe shutdown**
  - ◆ Resolution date will be established in updated chapter closure plan to support Chapter 9 closure date
  
- ▶ **Remaining open items**
  - ◆ RAI 578 Q09.04.03-7 – **February 18, 2015**
  - ◆ RAI 601 Q09.02.01-52 – **May 29, 2015**
  
- ▶ **FSAR closure package – September 2015**
  
- ▶ **Advanced SER – December 2015**

# Chapter 11 – Radioactive Waste Management

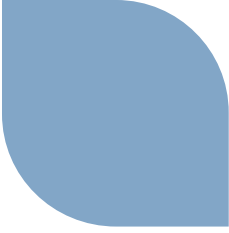


- ▶ **Major workscope**
  - ◆ Address inconsistencies for radiation monitor design bases, assignment of ITP test abstracts for radiation monitors, and other issues as identified in RAI 625 Q11.05-29
- ▶ **Key technical issues and cross-cutting issues**
  - ◆ **Radiological issues**
    - RAI 625 Q11.05-29 supersedes and subsumes RAI 528 Q11.05-28 and RAI 527 Q14.02-163
    - AREVA is performing a detailed V&V of inputs supporting FSAR Chapters 11 and 12 to resolve inconsistencies
    - Chapter 11 plans discussed at March 5, 2014 public meeting
  - ◆ **Ventilation system design**
    - RAI 578 Q09.04.03-7 is concerned with ventilation system design changes, including radiation monitors. See also RAI 625 Q11.05-29.
  - ◆ **Testing programs**
    - Ensure consistency between radiation monitor information in Chapter 11, Initial Test Program, and ITAAC
- ▶ **Other items of note**
  - ◆ Pending RAI related to Chapter 11 / ITAAC consistency deferred at AREVA's request. NRC workscope letter revision to request issuance of this RAI.
  - ◆ Resolve comments from FSAR Rev. 5 meeting in August 2013

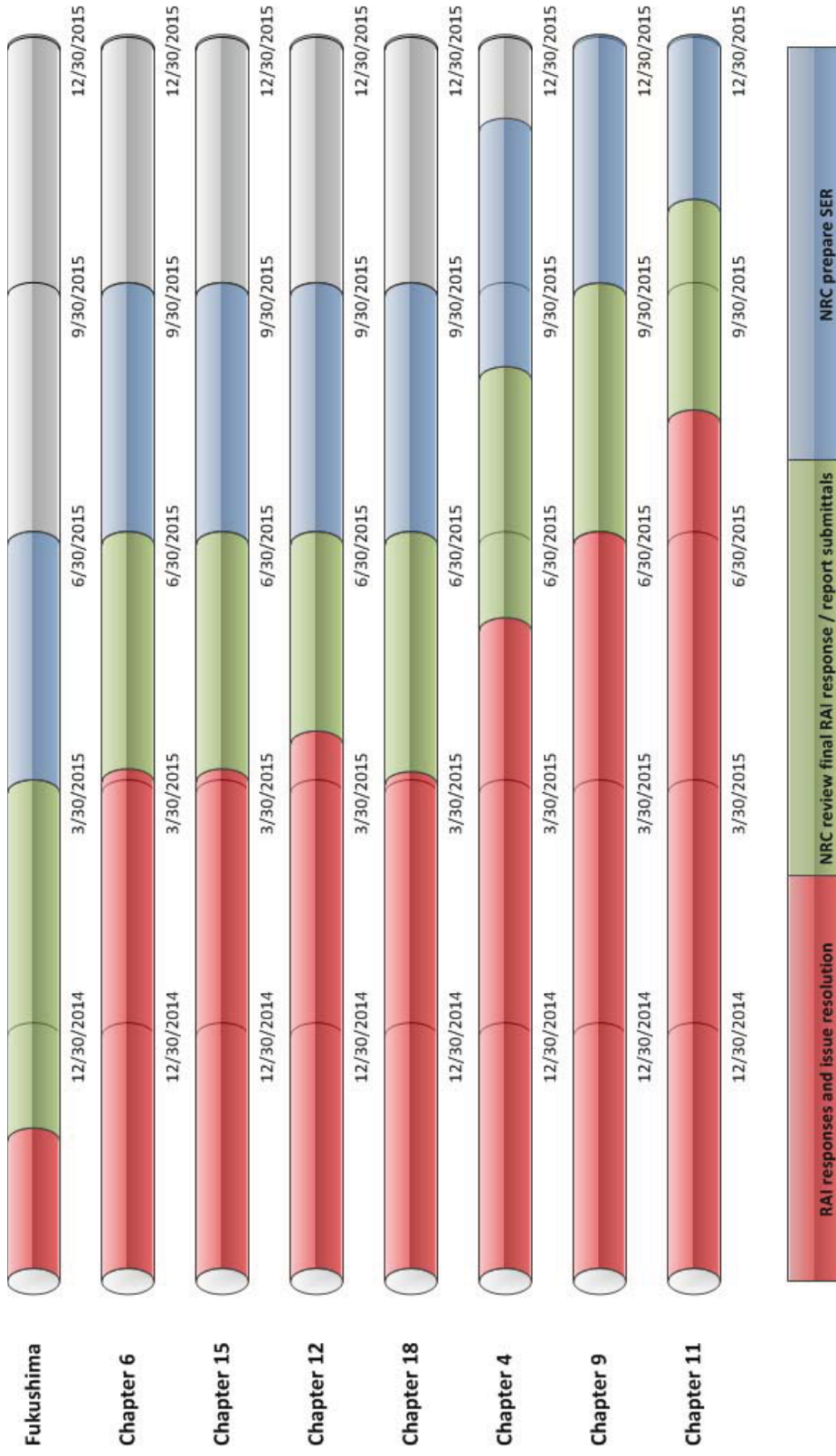


## Chapter 11 – Closure Plan Update

- ▶ **Issue: Radiological**
  - ◆ **RAI response submittals**
    - RAI 625 Q11.05-29 – **August 14, 2015**
    - RAI 527 Q14.02-163 (superseded by RAI 625)
    - RAI 528 Q11.05-28 (superseded by RAI 625)
    - RAI 301 Q11.02-17 (will be addressed by Ch. 12 RAI 539)
- ▶ **FSAR closure package – October 2015**
- ▶ **Advanced SER – January 2016**



# Group B Schedule Summary

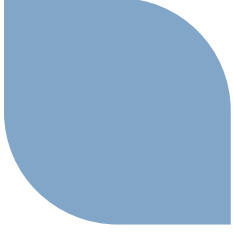






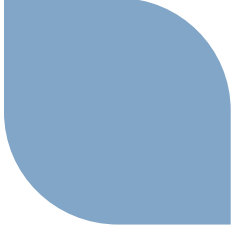
# FSAR Group C Closure Plans

- ▶ **Closure plans for FSAR Group C chapters will be impacted by the proposed Group B plan**
  - ◆ AREVA expects increased NRC engagement in CY2015 on Group C issues (e.g., digital I&C, critical sections) within resource constraints
  - ◆ Some Group C RAI responses may be deferred to support Group B closure activities
  - ◆ Best estimates will be provided in the updated closure plan letter
- ▶ **Additional work in CY2015**
  - ◆ **Chapter 3**
    - Critical sections – Revised RAI response and audit of time history methodology in late 2014 / early 2015, critical section finalization and audit later in 2015
    - Closure of design specifications technical issue
  - ◆ **Chapter 7**
    - AREVA expects to engage NRC in late 2014 and throughout 2015 to resolve issues with software failures and independence
    - Closure of SPND technical issue (November 2014 audit)
  - ◆ **Chapter 19**
    - Closure of severe accidents technical issue
    - PRA work may be deferred to CY2016



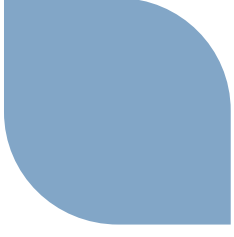
## Summary

- ▶ **Meeting purpose – Provide updated plans for FSAR Group B chapter closure in CY2015**
- ▶ **AREVA to complete and freeze prior to June 30, 2015 to support Advanced SERs in FY2015:**
  - ◆ Fukushima
  - ◆ Chapter 6 – Engineered Safety Features
  - ◆ Chapter 12 – Radiation Protection
  - ◆ Chapter 15 – Transient and Accident Analyses
  - ◆ Chapter 18 – Human Factors Engineering
- ▶ **AREVA to complete and freeze prior to December 31, 2015:**
  - ◆ Chapter 4 – Reactor
  - ◆ Chapter 9 – Auxiliary Systems
  - ◆ Chapter 11 – Radioactive Waste Management
- ▶ **Additional work planned in CY2015 on Group C chapters to support Phase 4 completion**



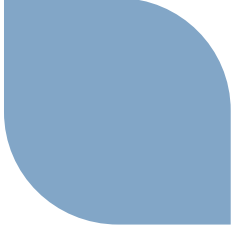
## Meeting Feedback

- ▶ **Desired outcome**
- ◆ **AREVA and NRC agree on chapter closure commitments and path to Advanced SERs for Group B chapters**
  - AREVA and NRC have sufficient information to plan CY2015 support for U.S. EPR DC project



## Next Steps

- ▶ **AREVA to update Group B/C closure plans by Sep. 30, 2014**
- ▶ **AREVA to update NRC workscope letter by Oct. 15, 2014 (CY2014 and CY2015)**



# Acronyms/Nomenclature

- ▶ **AO – Axial offset**
- ▶ **ATWS – Anticipated transient without scram**
- ▶ **AZI – Azimuthal power imbalance**
- ▶ **ECCS – Emergency core cooling system**
- ▶ **ELAP – Extended loss of ac power**
- ▶ **ERR – Electronic reading room**
- ▶ **FSAR – Final safety analysis report**
- ▶ **HFE – Human factors engineering**
- ▶ **ITAAC – Inspections, tests, analyses, and acceptance criteria**
- ▶ **ITP – Initial test program**
- ▶ **NPSH – Net positive suction head**
- ▶ **RAI – Request for additional information**
- ▶ **RLBLOCA – Realistic large break loss of coolant accident**
- ▶ **SER – Safety evaluation report**
- ▶ **SFCTF – Spent fuel cask transfer facility**
- ▶ **SPND – Self-powered neutron detector**
- ▶ **V&V – Verification and validation**