



Entergy.

CEA DROP TIME T.S. CHANGE REQUEST
WATERFORD 3
APRIL 22, 2015

Licensee Attendees

- Waterford 3
 - John Jarrell – Manager, Regulatory Assurance
 - Pamela Hernandez – Supervisor, Reactor Engineering
 - Leia Milster – Licensing Engineer, Regulatory Assurance
 - William Steelman – Contractor, SMI
- Westinghouse
 - Kim Jones – Fellow Engineer, Setpoints, Controls & Containment
 - Matthew Wilcox – Senior Engineer, Setpoints, Controls & Containment
 - Amanda Maguire – Senior Engineer, Regulatory Compliance

Outline

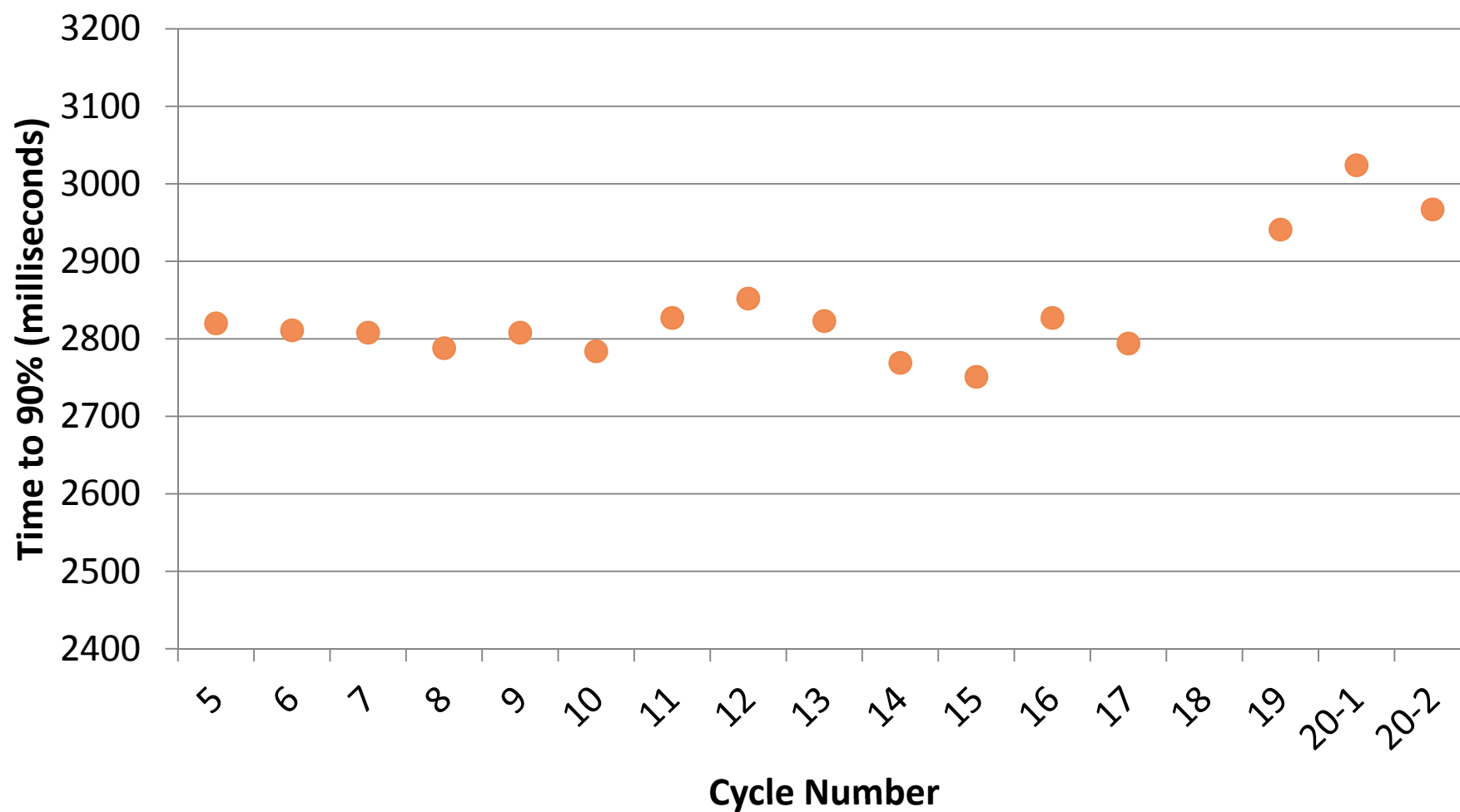
- Background for the License Amendment Request (LAR)
- LAR Technical Content
 - Control Element Assembly (CEA) SCRAM Insertion Curve position vs. time
 - Safety Analysis Margin
 - Core Operating Limit Supervisory System (COLSS) Required Overpower Margin (ROPM)
- Schedule

Background for LAR

- CEA Drop Times have challenged the Technical Specification (TS) limit in the last two surveillance performances
 - Waterford 3 TS 3.1.3.4 requires:
 - the arithmetic average of all CEA Drop Times be ≤ 3.0 seconds
 - Individual CEA drop times ≤ 3.2 seconds
 - Insertion time is measured from fully withdrawn position to 90% inserted

Historical Drop Times

CEA drop time group arithmetic average



* Cycle 20 includes repeated test

Potential Causes

Plant Primary Side Modifications

- Steam Generator replacement
- Reactor Vessel Head replacement
- CEA replacement
- Transition to Next Generation Fuel Product

Proposed TS Change

- Waterford 3 TS 3.1.3.4 would be revised to:
 - Raise the arithmetic average of all CEA Drop Times to be ≤ 3.2 seconds
 - Raise the Individual CEA drop times to ≤ 3.5 seconds

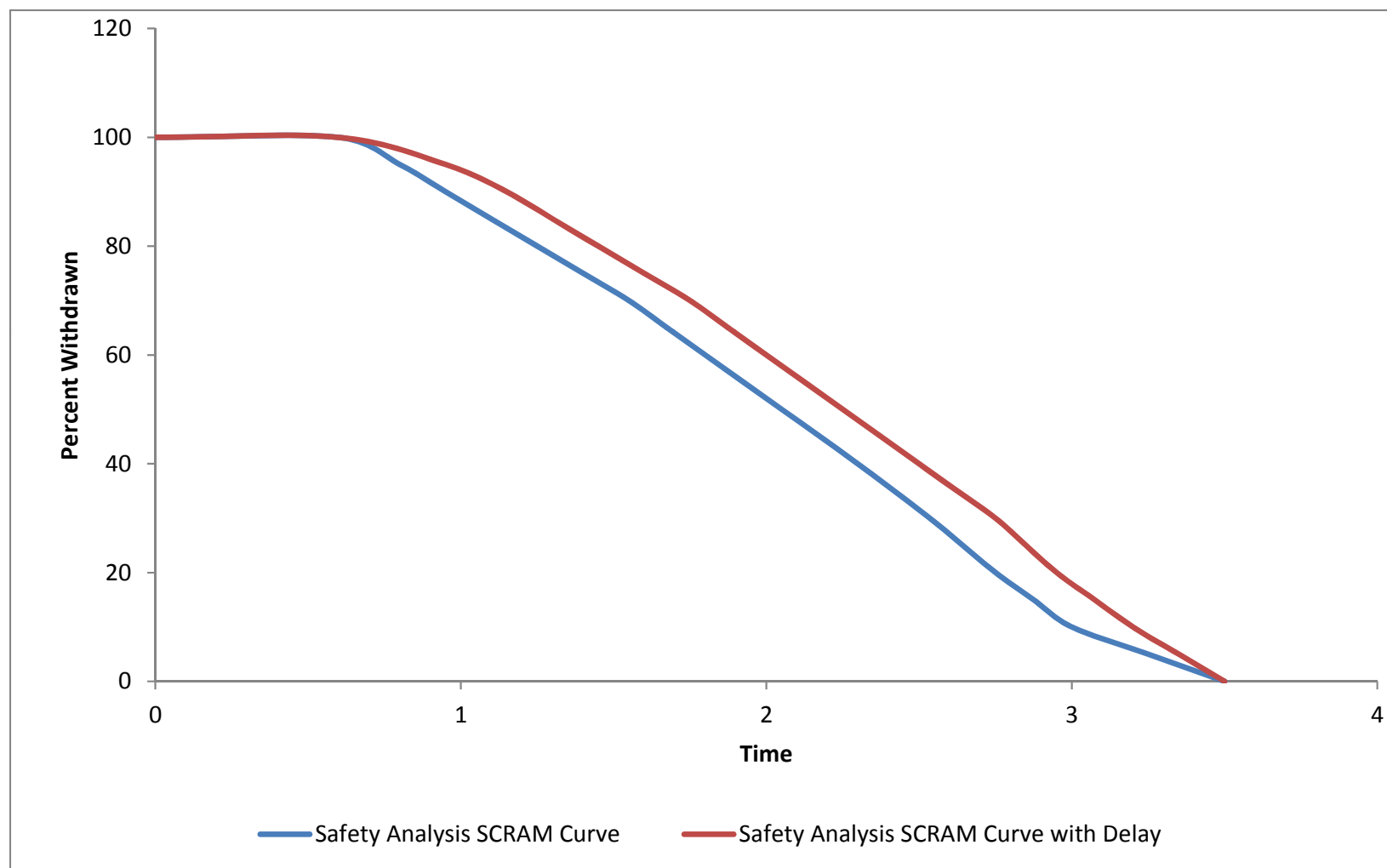
Analysis Goal

Overall

- The Chapter 15 Safety Analyses continue to meet all acceptance criteria
- The current Licensing Basis will remain bounding for the revised analyses
- There are no changes to the COLSS and CPCS databases and addressable constants.

CEA SCRAM Insertion Curve

Average Position vs Time



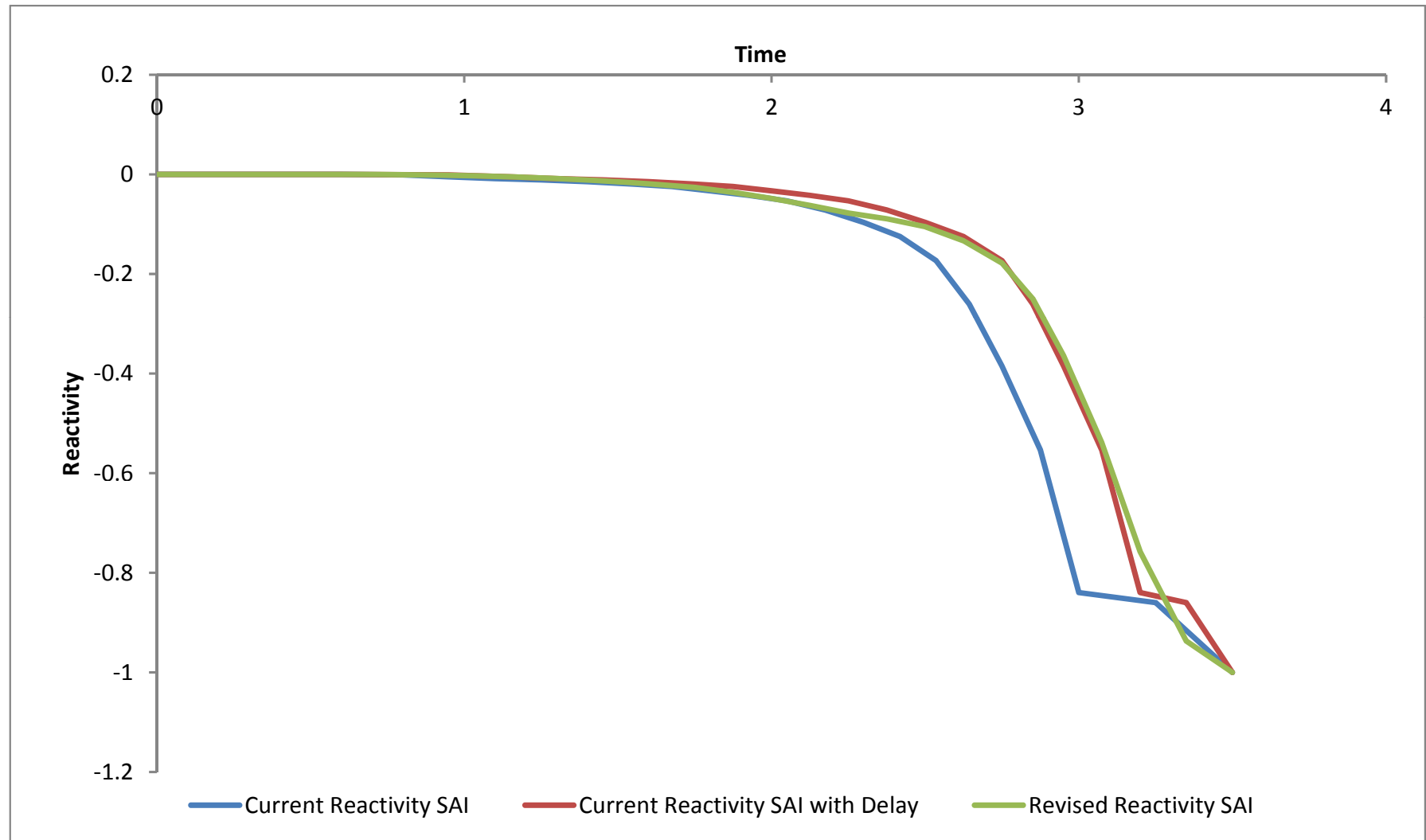
Safety Analysis Basis

Analysis Margin

- Updated Final Safety Analysis Report (UFSAR) Chapter 15 Design Basis Events are divided into Loss of Coolant Accident (LOCA) and Non-LOCA transient analyses.
- Safety analysis input (SAIs) consist of plant design and operating parameters that include uncertainties associated with them.
- Safety analyses apply the uncertainties in a conservative, or more restrictive, direction.
- On some parameters, the SAI uses a bounding input value, which is more adverse than the plant parameter plus uncertainty.
- Thus, the bounding SAI includes analysis margin, which can be reclaimed later.

Safety Analysis Margin

Revised Reactivity Safety Analysis Input vs Time



Safety Analysis Margin

COLSS ROPM

- Waterford is a Combustion Engineering Design Digital Plant
 - Limiting Conditions for Operations (LCOs)
 - Technical Specifications
 - Core Operating Limits Supervisory System
 - Maintains Departure from Nuclear Boiling Ration (DNBR) Margin
 - » Required Overpower Margin (ROPM)
 - » Linear Heat Rate (LHR)
 - DNB and LHR Protection
 - Core Protection Calculator Systems (CPCS)

Safety Analysis Margin

COLSS ROPM (cont'd)

- ROPM
 - Event ROPM is the actual thermal margin change during the design basis event (DBE).
 - Initial Analysis ROPM is the thermal margin set aside by the Safety Analyses at the start of the event.
 - COLSS ROPM is the thermal margin reserved by the COLSS to support the Technical Specification LCOs.
 - If $\text{COLSS ROPM} > \text{Event ROPM}$, then the minimum DNBR (mDNBR) $>$ DNB Specified Acceptable Fuel Design Limit (SAFDL)
 - ROPM can be used to offset calculated fuel failures due to DNB.

Method of Analysis

Analysis Basis

- There are no changes to the LOCA or Non-LOCA transient analysis **methods** from those in the current UFSAR.
- There are no changes to the Core Design / Neutronics methods that provide input to the LOCA and Non-LOCA transient analyses that support the current UFSAR.

DNBR Correlation

Analysis Basis

- There are no changes to the DNBR critical heat flux correlation.
- The DNB SAFDL value remains unchanged.

Topical Reports

Applicability

- The change in CEA SCRAM Insertion Curve does not impact the topical reports cited by Waterford Unit 3.
- Non-LOCA case results presented in the topical reports provide illustrative examples to confirm methodology, simulations, and determine trends.
- Conservative selection of inputs are performed in the plant specific analyses to support the UFSAR.

UFSAR Chapter 15 Non-LOCA Analyses

Event Categorization

- Each Non-LOCA UFSAR Chapter 15 Events will be discussed
- For each event, they are categorized as:
 - Evaluated (Impact analysis and/or evaluation utilizing current methodology)
 - Assessed (Impact determination and justification provided)
 - Bounded by another DBE
 - Not Impacted

Analyses Evaluated

Analyses Evaluated

Chapter 15.1.1.3: Increased Main Steam Flow

- Supports COLSS and CPCS
- Impacted by revised CEA SCRAM Insertion Curve.
 - ROPM increases ~1%.
- Evaluated
 - Benefit of Revised Reactivity Safety Analysis Input
 - ROPM decreases by ~0.6% for initial power $\geq 50\%$.
 - No benefit for initial power $< 50\%$.
 - Hot Full Power (HFP)
 - COLSS HFP ROPM $>$ Initial Analysis ROPM
 - Intermediate power levels for CPCS
 - Both trip and no-trip cases are analyzed.
 - No-trip cases bound trip cases.

Analyses Evaluated

Chapter 15.1.1.3: Increased Main Steam Flow

- Summary
 - Hot Full Power
 - Revised Reactivity SAI and COLSS ROPM offset the revised CEA SCRAM Insertion Curve.
 - Intermediate Power
 - No-trip cases are expected to remain bounding.
- Conclusions
 - No changes to COLSS Margin expected.
 - No changes to CPCS Input expected.

Analyses Evaluated

Chapter 15.1.2.3: Increased Main Steam Flow with Single Failure (SF)

- Supports radiological dose fuel failure limit of 8%.
- Analyzed at HFP.
 - Cycle specific fuel failure is ~50% of the limit.
- Impacted by revised CEA SCRAM Insertion Curve.
 - Expected fuel failure to increase by ~2%.
- Evaluated
 - Revised Reactivity SAI to lower expected fuel failure ~1%.

Analyses Evaluated

Chapter 15.1.2.3: Increased Main Steam Flow with Single Failure

- Summary of the Combined Impact
 - Expected fuel failure to increase by ~1%.
- Conclusions
 - Calculated fuel failure is expected to be < 8%.
 - No change to the radiological dose results expected.

Analyses Evaluated

*Chapters 15.2.1.3/15.2.2.3: Loss of Condenser Vacuum (LOCV)
(w/wo SF)*

- Limiting peak reactor coolant system (RCS) pressure for Moderate Frequency and Infrequent events.
- Limiting peak steam generator (SG) pressure for all DBEs.
- Impact estimate based on engineering judgment
 - Estimated peak RCS pressure increase < 1 psi.
 - Estimated peak SG pressure increase < 2 psi.

Analyses Evaluated

Chapters 15.2.1.3/15.2.2.3: LOCV (w/wo SF)

- Evaluated
 - Impact of revised CEA SCRAM Insertion Curve on peak RCS and SG pressure evaluated to determine increases.
 - < 1 psi prior to 90% insertion for RCS pressure.
 - < 5 psi after 90% insertion for RCS pressure.
 - < 1 psi for SG pressure.
 - Benefit of Revised Reactivity SAI on peak RCS and SG pressure evaluated to determine decreases.
 - 0 psi prior to 90% insertion for RCS pressure.
 - > 3 psi after 90% insertion for RCS pressure.
 - 0 psi for SG pressure.

Analyses Evaluated

Chapters 15.2.1.3/15.2.2.3: LOCV (w/wo SF)

- Summary of the combined impact
 - Prior to 90% insertion – Peak RCS pressure increases < 1 psi.
 - After 90% insertion – Peak RCS pressure increases < 2 psi.
 - Peak SG pressure < 1 psi.
- Confirmed Engineering judgment

Analyses Evaluated

Chapters 15.2.1.3/15.2.2.3: LOCV (w/wo SF)

- Current Chapter 15 Results
 - Current peak RCS pressure = 2711 psia < 2750 psia criterion.
 - Current peak SG pressure = 1181 psia < 1210 psia criterion.
- Conclusions
 - Updated peak RCS pressure < 2750 psia criterion.
 - Update peak SG pressure < 1210 psia criterion.
- Results are used to confirm assessments on subsequent DBEs.

Analyses Evaluated

Chapter 15.3.2.1: Total Loss of Forced Reactor Coolant Flow

- Supports HFP COLSS ROPM.
- Impacted by revised CEA SCRAM Insertion Curve.
 - ROPM increases ~1%.
- Evaluated
 - Safety analysis margin benefit
 - Revised Reactivity SAI
 - COLSS HFP ROPM > Initial Analysis Margin
- Summary
 - No impact on the results and conclusions.

Analyses Evaluated

Chapters 15.3.3.1/15.3.3.2: Single Reactor Coolant Pump (RCP) Shaft Seizure/Single RCP with a stuck open secondary safety valve

- Supports radiological dose fuel failure limit of 15%.
- Analyzed at HFP.
 - Cycle specific fuel failure is ~50% of the limit.
- Impacted by revised CEA SCRAM Insertion Curve.
 - Expected fuel failure to increase ~2%.
- Evaluated
 - Benefit of revised Reactivity SAI to lower expected fuel failure ~1%.

Analyses Evaluated

Chapters 15.3.3.1/15.3.3.2: Single Reactor Coolant Pump (RCP) Shaft Seizure/Single RCP with a stuck open secondary safety valve

- Summary
 - Expected fuel failure to increase ~1 %.
 - Total cycle specific fuel failure < 15 %.
 - Insignificant impact on steam releases.
 - No recalculation of radiological doses.
- Conclusion
 - No changes to radiological doses.
 - No changes to COLSS ROPM.

Analyses Evaluated

Chapter 15.4.1.1: Uncontrolled CEA Withdrawal from a Subcritical Condition

- Supports
 - mDNBR
 - Fuel Melt Limit
- Current Results
 - mDNBR >> DNB SAFDL
 - Fuel Centerline Temperature << Fuel Melt Limit
- Impacted by revised CEA SCRAM Insertion Curve.

Analyses Evaluated

Chapter 15.4.1.1: Uncontrolled CEA Withdrawal from a Subcritical Condition

- Evaluated/Assessed
 - Expectation that $mDNBR \gg DNB\ SAFDL$.
 - Expectation that Fuel Centerline Temperature \ll Fuel Melt Limit.
- Conclusions
 - Negligible impact on the results and conclusion.
 - No change to the UFSAR.

Analyses Evaluated

Chapter 15.4.1.2: Uncontrolled CEA Withdrawal at Low Power

- Supports
 - mDNBR
 - Fuel Melt Limit
- Current Results
 - mDNBR >> DNB SAFDL
 - Fuel Centerline Temperature << Fuel Melt Limit
- Impacted by revised CEA SCRAM Insertion Curve.
- Evaluated/Assessed
 - Expectation that mDNBR >> DNB SAFDL.
 - Expectation that Fuel Centerline Temperature << Fuel Melt Limit.
- Conclusions
 - Negligible impact on the results and conclusion.
 - No change to the UFSAR.

Analyses Evaluated

Chapter 15.4.1.3: Uncontrolled CEA Withdrawal at Power

- Supports COLSS and CPCS.
- Impacted by revised CEA SCRAM Insertion Curve.
 - ROPM increases ~1%.
- Evaluated
 - Benefit of Revised Reactivity Safety Analysis Input
 - ROPM decreases by ~0.6% for initial power $\geq 50\%$.
 - No benefit for initial power $< 50\%$.
 - HFP
 - COLSS HFP ROPM $>$ Initial Analysis ROPM
 - Intermediate power levels for CPCS
 - Both trip and no-trip cases are analyzed.
 - No-trip cases bound trip cases.

Analyses Evaluated

Chapter 15.4.1.3: Uncontrolled CEA Withdrawal at Power

- Summary
 - HFP: Revised Reactivity SAI and COLSS ROPM offset revised CEA SCRAM Insertion Curve.
 - Intermediate Power: No-trip cases are expected to remain bounding.
- Conclusions
 - No changes to COLSS Margin expected.
 - No changes to CPCS Input expected.

Analyses Evaluated

Chapter 15.4.3.6: CEA Ejection

- Supports radiological dose fuel failure limit of 15% for DNB and 0% for fuel rod enthalpy.
- Analyzed parametric in power from HFP to Hot Zero Power (HZP).
 - Cycle specific fuel failure is ~70% of the limit.
- Defines key Non-LOCA Input.
 - COLSS ROPM for HFP and intermediate power levels
 - CPCS input
 - Bounding physics input
- Impacted by revised CEA SCRAM Insertion Curve.
 - Expected fuel failure to increase by ~2%.
 - Expected rod enthalpy to increase above the limit.
 - Insignificant for steam releases.

Analyses Evaluated

Chapter 15.4.3.6: CEA Ejection

- Evaluated
 - Benefit of revised Reactivity SAI partially offsets the revised CEA SCRAM Insertion Curve for initial power levels $\geq 50\%$.
 - Expected to lower fuel failure $\sim 1\%$.
 - Expected benefit to offset $\sim 50\%$ of the enthalpy increase.
 - If calculated fuel failures exceed radiological dose limits, OR if fuel rod enthalpies exceed the limits, THEN:
 - Credit SAI margin in bounding physics data for all power levels if needed to maintain current results.
 - Reduce bounding physics values for ejected CEA rod worth and ejected peaks.

Analyses Evaluated

Chapter 15.4.3.6: CEA Ejection

- Summary
 - Reduction in bounding ejected CEA rod worth expected.
 - Reduction in bounding ejected CEA peak expected.
 - No changes to COLSS ROPM expected.
 - No changes to CPCS input expected.
- Conclusion
 - Expected impact on fuel failure to remain < 15% for DNB and 0% for fuel rod enthalpy.

Analyses Evaluated

Chapter 15.9: Asymmetric Steam Generator Transient

- Supports COLSS ROPM and CPCS input.
- Impacted by revised CEA SCRAM Insertion Curve.
 - ROPM increases ~1%.
- Evaluated
 - Benefit of Revised Reactivity Safety Analysis Input
 - ROPM decrease by ~0.6% for initial power $\geq 50\%$.
 - Initial Analysis ROPM > Event ROPM
 - COLSS ROPM > Initial Analysis ROPM

Analyses Evaluated

Chapter 15.9: Asymmetric Steam Generator Transient

- Summary
 - HFP
 - Revised Reactivity SAI and COLSS ROPM offset the impact of revised CEA SCRAM Insertion Curve.
 - Intermediate Power
 - Revised Reactivity SAI and Initial Analysis ROPM offset the impact of revised CEA SCRAM Insertion Curve.
- Conclusion
 - No change to the COLSS Margin expected.
 - No change to the CPCS Input expected.

Analyses Assessed

Analyses Assessed

Chapter 15.1.1.4: Inadvertent Opening of an Atmospheric Dump Valve

- Hot Zero Power
 - mDNBR
 - LHR
 - Steam releases
- Current Results
 - mDNBR >> DNB SAFDL at ~85 seconds
 - LHR << Steady State Limit at ~83 second
 - Reactor trip occurs at 600 seconds
 - 2-hour steam releases = ~1 M-lbm
 - Shutdown cooling steam releases = ~2.5 M-lbm

Analyses Assessed

Chapter 15.1.1.4: Inadvertent Opening of an Atmospheric Dump Valve

- Impact of the revised CEA SCRAM Insertion Curve
 - No Impact on mDNBR and peak LHR.
 - Insignificant impact on steam releases.
- Conclusion
 - No impact on the results and conclusions.

Analyses Assessed

Chapter 15.1.2.4: Inadvertent Opening of an Atmospheric Dump Valve with SF

- Hot Full Power
 - Supports radiological dose; fuel failure limit is zero.
- Impacted by revised CEA SCRAM Insertion Curve
 - $mDNBR < DNB\ SAFDL$
- Assessed/Evaluated
 - Benefit of revised Reactivity SAI to increase $mDNBR$
 - COLSS HFP ROPM $>$ Initial Analysis ROPM

Analyses Assessed

Chapter 15.1.2.4: Inadvertent Opening of an Atmospheric Dump Valve with SF

- Impact of CEA SCRAM Insertion Curve is offset by benefit of safety analysis margin.
 - Revised Reactivity SAI
 - Analysis Margin in COLSS HFP ROPM value
 - $mDNBR > DNB\ SAFDL$
 - No Fuel Failure
- Conclusions
 - No impact on the results and conclusions.

Analyses Assessed

Chapter 15.1.3.1: Steam System Piping Failures Post-trip Return-to-Power (R-t-P) and Return-to-Criticality (R-t-C)

- Hot Full Power and Hot Zero Power w/wo LOAC
- Assessed
 - Insignificant impact on steam releases.
 - Rate of reactivity insertion during the CEA SCRAM rod insertion has a negligible impact on the reactivity balance at the time of R-t-P and R-t-C.
- Conclusions
 - No impact on the results and conclusions.

Analyses Assessed

Chapter 15.1.3.3: Steam System Piping Failures Pre-trip Power Excursion Analysis

- Supports radiological dose fuel failure limit of 8%.
 - Current calculated fuel failure is zero.
 - $mDNBR \gg DNB\ SAFDL$
- Impacted by revised CEA SCRAM Insertion Curve.
- Assessed
 - Use results from the Increased Main Steam Flow
 - $COLSS\ ROPM > Event\ ROPM$

Analyses Assessed

Chapters 15.1.3.3: Steam System Piping Failures Pre-trip Power Excursion Analysis

- Impact of the CEA SCRAM Insertion Time offset by safety analysis margin.
 - Revised Reactivity SAI
 - COLSS HFP ROPM > Event ROPM
 - mDNBR > > DNB SAFDL
 - Calculated fuel failure to remain zero.
- Conclusions
 - No impact on the results and conclusions.

Analyses Assessed

Chapters 15.2.2.5/15.2.3.2: Loss of Normal Feedwater Flow (w/wo SF)

- Assessed using LOCV results.
- Expectation is the benefit of the Revised Reactivity SAI offsets the revised CEA SCRAM Insertion Curve.

Analyses Assessed

Chapter 15.2.3.1: Feedwater System Pipe Breaks

- Assessed using LOCV results.
- Expectation is the benefit of the Revised Reactivity SAI offsets the revised CEA SCRAM Insertion Curve.

Analyses Assessed

Chapter 15.4.1.4: CEA Misoperation: Single CEA Withdrawal (SCEAW)

- Impacted by revised CEA SCRAM Insertion Curve.
- Current results
 - Analysis performed at intermediate power levels.
 - Both trip and no-trip cases are analyzed.
 - No-trip cases bound trip cases.
- Assessed using CEAW at power results.
- Impact
 - Benefit of revised Reactivity SAI is available to offset some of the increase for the trip cases due to revised CEA SCRAM Insertion Curve for initial power levels $\geq 50\%$.
 - No-trip cases are expected to bound the trip cases.
- Conclusions
 - No change to COLSS Margin expected.
 - No change to CPCS Input expected.
 - No changes to results and conclusions are expected.

Analyses Assessed

Chapter 15.6.3.2: Steam Generator Tube Rupture

- Supports radiological doses.
 - Primary-to-secondary mass transfer
 - Steam releases
- Assessed
 - Rate of reactivity insertion during the CEA SCRAM has an insignificant impact on the primary-to-secondary mass transfer and secondary steam releases.
- Conclusions
 - No impact on the results and conclusions expected.

Analyses Assessed

Chapter 15.6.3.3: LOCA

- Large Break LOCA
 - SCRAM rod insertion not credited.
 - Not Impacted
- Small Break LOCA
 - The expectation is that the impact will be negligible.
- Long term cooling
 - SCRAM rod insertion is not credited.
 - Not Impacted
- Conclusions
 - No changes to the results and conclusions are expected.

Analyses Assessed

Chapter 15.8: Anticipated Transient Without SCRAM

- Diversified SCRAM System
- Diversified SCRAM System setpoints not impacted
- Rate of reactivity insertion during the CEA SCRAM has a negligible impact on the results.
- Not Impacted

Analyses Bounded by Another Analysis

Analyses Bounded by Another Analysis

- Chapters 15.1.1.1/15.1.2.1: Decrease in Feedwater Temperature (w/wo SF)
 - Bounded by the Increased Main Steam Flow (w/wo SF) in Chapters 15.1.1.3/15.1.2.3.
- Chapters 15.1.1.2/15.1.2.2: Increase in Feedwater Flow (w/wo SF)
 - Bounded by the Increased Main Steam Flow (w/wo SF) in Chapters 15.1.1.3/15.1.2.3.

Analyses Bounded by Another Analysis

- Chapters 15.2.1.1/15.2.2.1: Loss of External Load (w/wo SF)
 - Bounded by the Loss of Condenser Vacuum (LOCV) (w/wo SF) in Chapters 15.2.1.3/15.2.2.3.
- Chapters 15.2.1.2/15.2.2.2: Turbine Trip (w/wo SF)
 - Bounded by the LOCV (w/wo SF) in Chapters 15.2.1.3/15.2.2.3.

Analyses Bounded by Another Analysis

- Chapters 15.2.1.4/15.2.2.4: Loss of Normal AC Power (w/wo SF)
 - Bounded by the LOCV (w/wo SF) in Chapters 15.2.1.3/15.2.2.3.
 - Bounded by the Total Loss of Forced Reactor Coolant Flow in Chapter 15.3.2.1.

Analyses Bounded by Another Analysis

- Chapters 15.3.1.1/15.3.2.2: Partial Loss of Forced Reactor Coolant Flow (w/wo SF)
 - Bounded by the Total Loss of Forced Reactor Coolant Flow in Chapter 15.3.2.1.

Analyses Bounded by Another Analysis

- Chapter 15.4.1.5: Chemical and Volume Control System (CVCS) Malfunction (inadvertent boron dilution)
 - Operational Modes 1 and 2
 - Bounded by the CEA Withdrawal at Power in Chapter 15.4.1.3.
 - Bounded by the CEA Withdrawal at Low Power in Chapter 15.4.1.2.
 - Operational Modes 3, 4, 5 and 6
 - Rods are full inserted for Modes 3, 4, 5, and 6.
 - Not Impacted

Analyses Not Impacted

Analyses Not Impacted

- Chapter 15.1.3.2: Steam System Piping Failures Inside and Outside Containment (Modes 3 and 4 with All CEAs Fully Inserted)
- Chapter 15.4.1.4: CEA Misoperation: Single and Subgroup CEA Drop
 - No reactor trip generated

Analyses Not Impacted

- Chapter 15.4.1.6: Startup of an Inactive RCS Pump
 - Analyzed in Operational Modes 3, 4, and 5.
 - CEA SCRAM rods are fully inserted.
- Chapter 15.4.3.1: Inadvertent Loading of Fuel Assembly into the Improper Position
 - CEA SCRAM rods do not impact this event.

Analyses Not Impacted

- Chapter 15.5.1.2: Inadvertent Operation of the Emergency Core Cooling System (ECCS) during Power Operation
 - High Pressure Safety Injection (HPSI) system head is less than normal Reactor Coolant System (RCS) pressure
- Chapter 15.6.3.1: Primary Sample or Instrument Line Break
 - Assumes Operator Action for Reactor Trip

Analyses Not Impacted

- Chapter 15.7.3.3: Postulated Radioactive Release Due to Liquid Containing Tank Failures
 - Not relevant to this event
- Chapter 15.7.3.4: Design Basis Fuel Handling Accidents
 - Not relevant to this event
- Chapter 15.7.3.5: Spent Fuel Cask Accidents
 - Not relevant to this event

Analysis Summary

UFSAR Chapter 15

- Minimal impact on the LOCA safety analyses.
- Minimal impact on the Non-LOCA safety analyses.
- No changes to COLSS ROPM expected.
- No changes to CPCS inputs expected.
- Potential decrease in bounding CEA Ejection physics data.
- No changes expected to the results and conclusions contained in the current UFSAR Chapter 15.

COLSS and CPCS Summary

Database and Addressable Constants

- No changes are expected to the COLSS and CPCS database.
- No changes are expected to the COLSS and CPCS addressable constants.

Summary

Overall

- The Chapter 15 Safety Analyses continue to meet all acceptance criteria
- The current Licensing Basis will remain bounding for the revised analyses
- There are no changes to the COLSS and CPCS databases and addressable constants.

License Amendment Request

Schedule

- CEA Drop Time testing is performed at the end of the refueling outage prior to criticality and is typically a critical path activity
- Failure of the surveillance test would result in an immediate delay in startup following the next refueling outage
- Westinghouse analysis work is on-going
- License Amendment Request is expected to be submitted in June 2015
- Waterford 3 requests the LAR approval be completed by October 25, 2015

Conclusion

- Thank you for your time and consideration
- Questions?