



SNC Successes from Risk-Informed Initiatives

NRC Regulatory Information Conference

March 11, 2020

Ryan Joyce
Lead Engineer, Nuclear Licensing

1

Introduction

Topics

- SNC Risk-Informed Initiative Status
- 5b (Surveillance Frequency Control Program) Successes
- 4b (Risk-Informed Technical Specification) Successes
- 50.69 (Risk-informed categorization and treatment of structures, systems and components) Successes
- 4b & 50.69 Synergy Successes

Southern Nuclear Risk Informed Initiative Status

Risk Informed Initiatives Strategic Plan		Farley	Hatch	Vogtle	
Initiative 1, Tech Spec Required Action End States					
Initiative 2, Missed Surveillances SR 3.0.3					
Initiative 3, Mode Change					Approved
Initiative 4b, Risk-Informed Completion Times			TBD		Submitted
Initiative 5b, Relocate STIs to Licensee Control					Planned
Initiative 7a, Impact of Non TS Design Features Operability Requirements	Snubbers				Not Pursuing
	Barriers				
Categorization & Treatment of SSCs (50.69)		2020	2019		
In-service Inspection Program					
Permanent ILRT Extension					
Tornado Missile Protection					
NFPA-805 (10 CFR 50.48c)			2019		

3

5b (Surveillance Frequency Control Program) Successes

- Farley – extended 46 Technical Specification (TS) Surveillance Requirements (SRs)
- Hatch – extended 74 TS SRs
- Vogtle – extended 55 TS SRs
- Benefits realized include:
 - Reduced dose
 - Reduced component wear and tear
 - Reduced potential for test-caused errors
 - Work management simplification
 - Outage work control
 - Burden reduction

5b (Surveillance Frequency Control Program) Successes

- SNC launching fleet-wide initiative to systematically evaluate which TS surveillances should be extended
- SNC prioritizing surveillance extensions based on:
 1. Limiting plant risk (e.g. avoiding half-trip conditions)
 2. Manhour savings
 3. Outage cost savings
- Benefits/savings to be quantified throughout the year as they are realized

4b (Risk-Informed Technical Specification) Successes

Farley

- Approved August 2019
- Incorporated into on-line risk management tool (Phoenix) January 2020

Vogtle

- Approved August 2017
- Benefits realized include:
 - Multiple notice of enforcement discretion (NOED) request “scares” avoided
 - Increased flexibility for maintenance planning (previously maintenance durations were rarely scheduled for >0.5x allowed TS outage time)
 - Risk-informed completion time (RICT) entered five separate occasions (3x for EDG overhaul, 2x for essential chilled water system outage)

50.69 Successes

Vogtle

- Inservice Inspection (ISI)
 - Contract Labor cost reduced by 20% per outage
- Inservice Testing (IST)
 - IST scope for categorized systems reduced by 42%
 - Containment Spray full flow, contract labor savings of \$200,000 per outage
- Reduced outage budgets
 - 1R21 reduced by \$195,000
 - 2R20 reduced by \$155,000
- >\$1.6M hard savings realized from alternate treatment
- >1,000 person-hour annual savings

50.69 Successes

1" STAINLESS STEEL DRAIN VALVE (ASME SA182, Grade F13, ANSI RATING 600 lb)



\$20,414



Safety Related



\$1,556

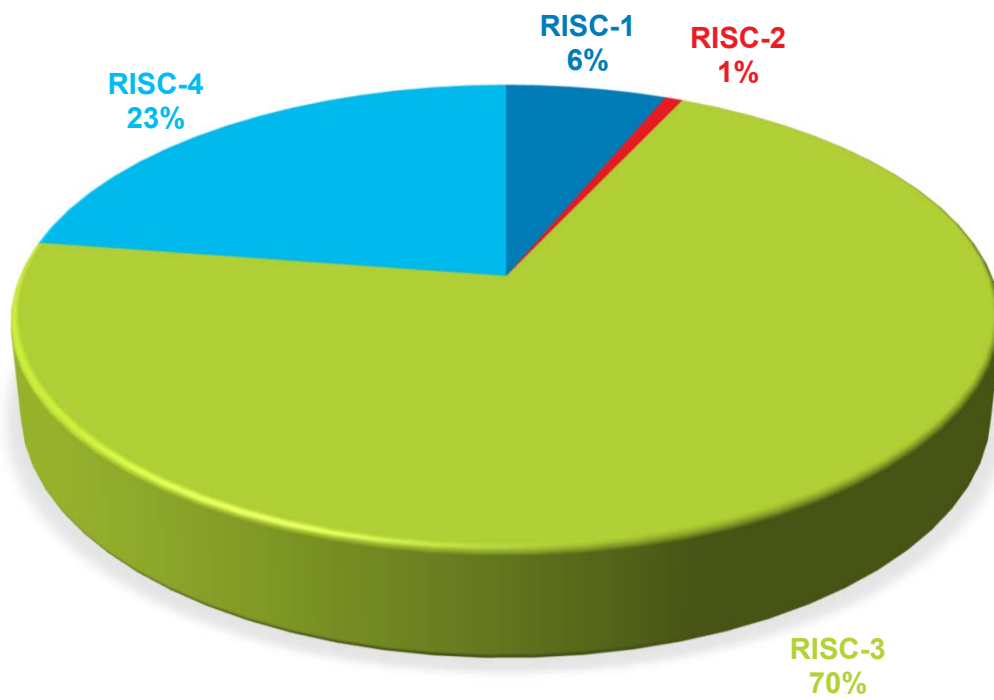


Commercial Quality

VEGP Systems Categorized

System	RISC-1 Components	RISC-2 Components	RISC-3 Components	RISC-4 Components	Total Components
Radiation Monitoring	0	0	540	1390	1930
Component Cooling Water	84	12	1321	695	2112
Containment Spray	129	7	804	145	1085
Nuclear Service Cooling Water	328	39	6547	1273	8187
Essential Chilled Water	4	0	4117	393	4514
Nuclear Instrumentation	22	0	16	70	108
Plant Safety Monitoring	38	2	0	0	40
Chemical Volume Control	1128	128	6260	2311	9827
	6.2%	0.7%	70.5%	22.6%	27803

50.69 Categorization Results



10

4b & 50.69 Synergy Successes – Essential Chilled Water System Pump

Background

- Excess seal leakage discovered on Vogtle 1B essential chilled water (ECW) system pump
 - Safety-related seal package ~\$130k, including refurb
 - Estimated ~14 days to repair
 - Plan was to refurb all four pumps, for a total cost of \$520k and 56 days out of service time
 - No spare pumps in inventory
- Pump is categorized as RISC-3

4b & 50.69 Synergy Successes – Essential Chilled Water System Pump

Alternate Plan with 50.69 AT Procurement

- Alternative Treatment Procurement generated for new **Commercial** quality ECW pumps
- Approximately \$40k per pump, 4 pumps
- Projected duration of 65 hours to install a **Commercial** ECW pump - no modifications required for fit-up/installation



12

4b & 50.69 Synergy Successes – Essential Chilled Water System Pump

Benefits of 50.69 Alternative Treatment Procurement

- 50.69 enabled several options to ensure the greatest equipment reliability
- \$160K total cost to maintenance budget for 4 new pumps vs. \$520K total cost for SR seals and SR refurb services (\$360K savings)
- Will have spare pump in inventory if old pumps are refurbished
- Increased safety system availability, avoided 4 long uses of RICT and associated work management limitations during the RICTs
- Potential additional savings, pending results of investment recovery

Benefits of RICT

- Without 4b RICT program, Vogtle would not have attempted a 65 hour outage with only a 72 hour allowed out of service time
- Without 4b RICT program, options were either a plant shutdown to repair or to operate with degraded pump seal until next refueling outage

13

