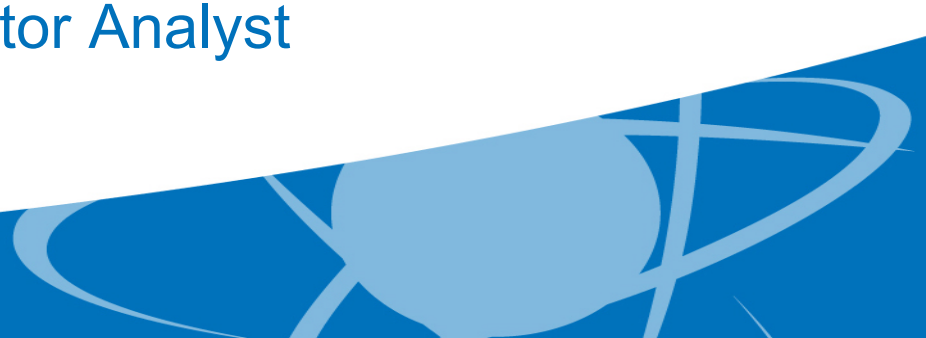


# SDP Overview

2021 PRA Users Group Meeting  
November 4-5, 2021

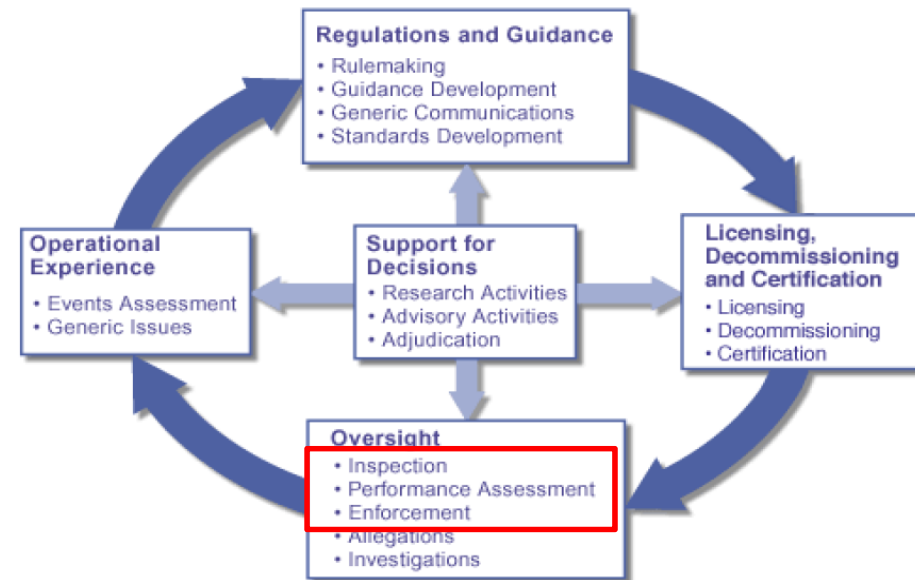
Alex Garmoe  
Senior Reactor Analyst



# How NRC Regulates



- Operating reactor performance assessed via Performance Indicators and Inspection
- Enforcement: focus on violations, compliance with requirements
- ROP: focus on findings, adherence to self-imposed standards
  - Ex: a particular chosen methodology for meeting a requirement
- Long-time view that safety is assured through compliance but ROP brought in more risk-informed approaches



# Screening of Inspection Issues



- Start with “issue of concern”
  - Could ultimately be nothing, could be something...don’t know at this point
- Multiple risk-informed screenings applied
  - Very Low Safety Significance Issue Resolution process
  - Was failure to meet a requirement or standard within the licensee’s ability to foresee and correct
  - Minor vs more-than-Minor questions and examples
- If you get here, SDP begins



# Significance Determination Process Structure



- Determine whether Finding is Green, White, Yellow, Red
- CDF is surrogate goal for latent cancers (goal: 0.1% of all cancers)
- LERF is surrogate goal for prompt fatality (goal: 0.1% of all accidental deaths)
- Note: PI thresholds not as directly tied to risk as Finding thresholds

Color	CDF	LERF
Green	<1E-6	<1E-7
White	1E-6 to 1E-5	1E-7 to 1E-6
Yellow	1E-5 to 1E-4	1E-6 to 1E-5
Red	>1E-4	>1E-5

# Significance Determination Process Structure



- Green screening questions
- NRC Inspection Finding Review Board if issue does not screen Green
  - Align on performance deficiency, risk evaluation resources, communicate
- Exchange of information between licensee and agency risk analysts
- Preliminary risk determination issued by the NRC
- Licensee decision for Regulatory Conference or written response
- Consideration of additional information provided by the licensee
- Final risk determination issued by the NRC
- 255-day total timeline

# Significance Determination Process Structure



- SDP uses the concept of “best available information”
- Not looking for absolute precision – looking for “good enough”
  - Results are not point-estimates due to uncertainties
  - Results should not drive “million-dollar” testing programs
  - We might not wait on “million-dollar” testing program results
- Need to ensure timely follow-up actions and input into the operating reactor assessment process
  - Longer SDP means finding may be open longer
- It should be possible to get a final answer in 8 months
  - The process in general is taking too long
  - Industry pushback is elevated

# The Documents



- Issue Screening Guidance: IMC 0612
- SDP Guidance: IMC 0609

App A: At-power SDP

App B: Emergency Preparedness

App C: Occupational Radiation Safety

App D: Public Radiation Safety

App E: Security

App F: Fire Protection

App G: Shutdown Operations

App H: Containment Integrity

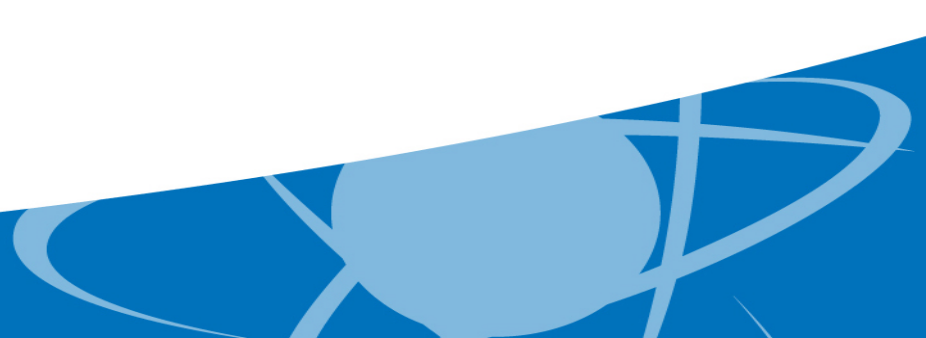
App I: Licensed Operator Requal

App J: SG Tube Integrity

App K: Maintenance Risk/Risk Mgmt

App L: B.5.b

App M: Qualitative SDP



# The Documents Recently Revised



- Issue Screening Guidance: IMC 0612
- SDP Guidance: **IMC 0609**

**App A: At-power SDP**

App B: Emergency Preparedness

App C: Occupational Radiation Safety

**App D: Public Radiation Safety**

App E: Security

App F: Fire Protection

App G: Shutdown Operations

App H: Containment Integrity

App I: Licensed Operator Requal

App J: SG Tube Integrity

App K: Maintenance Risk/Risk Mgmt

App L: B.5.b

App M: Qualitative SDP

**App O: FLEX**

- Note: routine revisions with mainly editorial or formatting updates are not shown



# Recently Revised SDP Guidance



- IMC 0609
  - Numerous minor updates to clarify timeliness metrics, appeal process, uncertainty, qualitative considerations
- App A (and elimination of App O)
  - Biggest change was incorporation of revised FLEX screening questions previously located in Appendix O
  - Other minor changes to at-power screening questions and routing
- App D
  - New guidance for Part 37 issues at Part 50 facilities
  - Revised guidance for transportation issues

# Greater Than Green Findings and PIs (2020 and 2021)



Browns Ferry 1, 2, 3	Security	GTG
Vogtle 1&2	Failure to Calibrate Containment High-range Area Radiation Monitors	White
Surry 2	Failure to implement the ASME Operation and Maintenance Code (OM) Inservice Testing Program for Pumps and Valves (IST) leads to a failure of the turbine driven auxiliary feedwater pump during testing.	White
Clinton	Security	GTG
Fitzpatrick	Defective Part Results in High Pressure Coolant Injection System Pressure Control Valve Failure	White

Grand Gulf	Unplanned Scrams	3Q2020-present
Callaway	Unplanned Scrams	4Q2020-present
Turkey Point 3	Unplanned Scrams	1Q2021-present

# Other Risk-Informed Applications



Process	Purpose	Metric	Source
NOED	Determine if it is acceptable to allow deliberate violation of Tech Specs	ICCDP and/or ICLERP	Licensee and SPAR models
MD 8.3	Quick decision on whether additional fact-finding inspection is necessary	CCDP and/or CLERP	SPAR model
SDP	Determine the safety significance of a finding	$\Delta$ CDF and/or $\Delta$ LERF	SPAR model informed by licensee models
ASP	Evaluate operational events to assess the potential risk significance	CCDP or $\Delta$ CDP	SPAR model
LIC-504	Disposition emergent safety issues that don't fit within other processes	CCDF and/or CLERF	SPAR model
Generic Issues	Evaluate risk significant issues affecting two or more facilities for possible additional regulatory action	$\Delta$ CDF and/or $\Delta$ LERF	SPAR models

# Questions

