

# Industry Revision 4d to NUMARC 93-01: Guidance on FLEX and the Maintenance Rule

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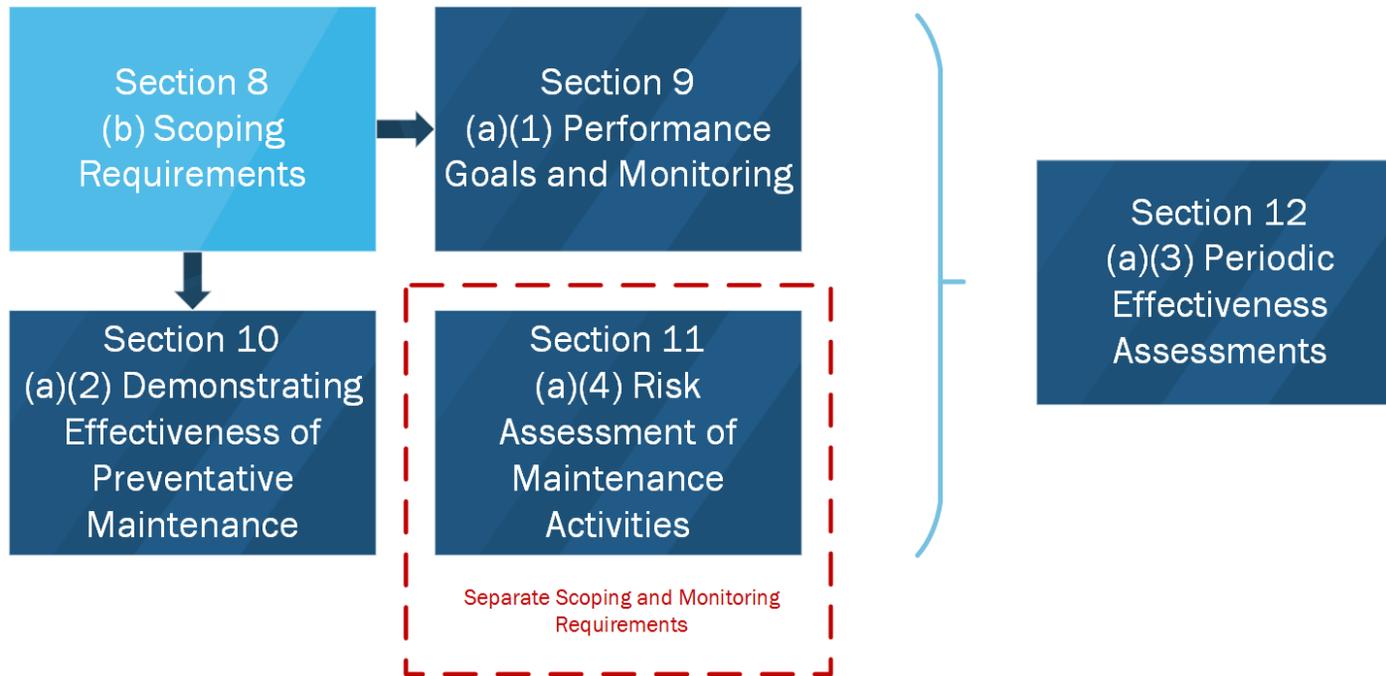
# Objective

- Clarify the scoping requirements of the Maintenance Rule to address the integration of FLEX Support Guidelines with the EOP network

# Goals

1. Develop common understanding of maintenance rule scoping requirements
2. Develop language to exclude the FLEX Support Guidelines as currently implemented
3. Enable sites to expand FSGs to further improve safety for beyond design basis conditions (i.e., beyond requirements of FSAR and Tech Specs)
4. Establish language consistent with current construct of NUMARC 93-01

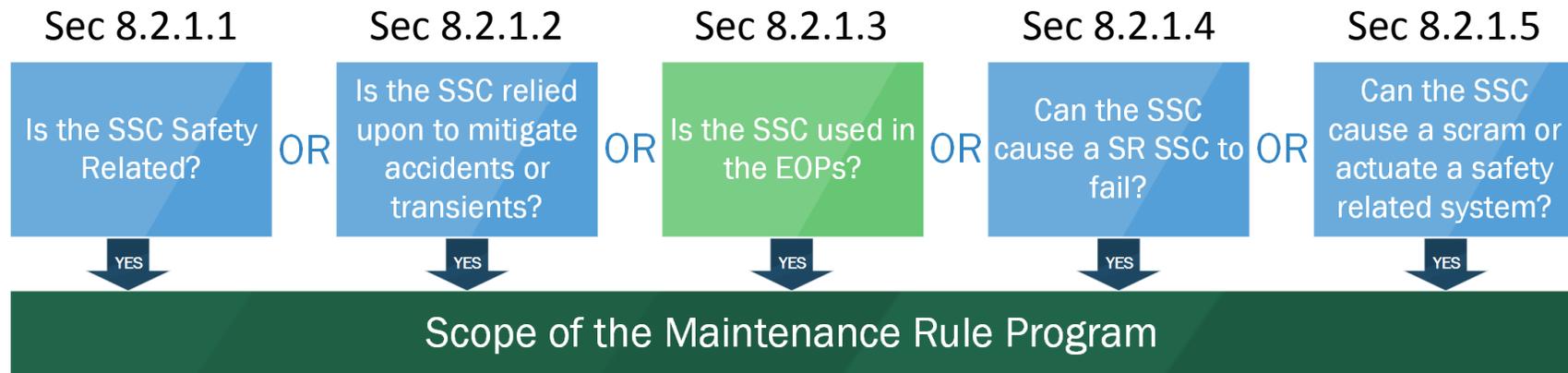
# NUMARC 93-01 Structure



# 10 CFR 50.65(b) Scoping Requirements

1. **Safety-related** structures, systems, or **components** that are relied upon to remain functional during and **following design basis events** to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR part 100 guidelines.
2. **Nonsafety-related** structures, systems, or **components**:
  - i. That are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures (EOPs); or
  - ii. Whose **failure** could **prevent safety-related** structures, systems, and **components from fulfilling their safety-related function**; or
  - iii. Whose **failure** could **cause a reactor scram or actuation of a safety-related system**.

# NUMARC 93-01 Scoping Structure



- Scoping is based on what SSCs are **required** to mitigate accidents or where their failure could have an adverse affect on the plant
- Each subsection is independent and provides guidance on answering each question. Any of which may lead to an SSC to be in-scope

## Section 8.2.1.2

Are the nonsafety-related SSCs relied upon to mitigate accidents or transients?

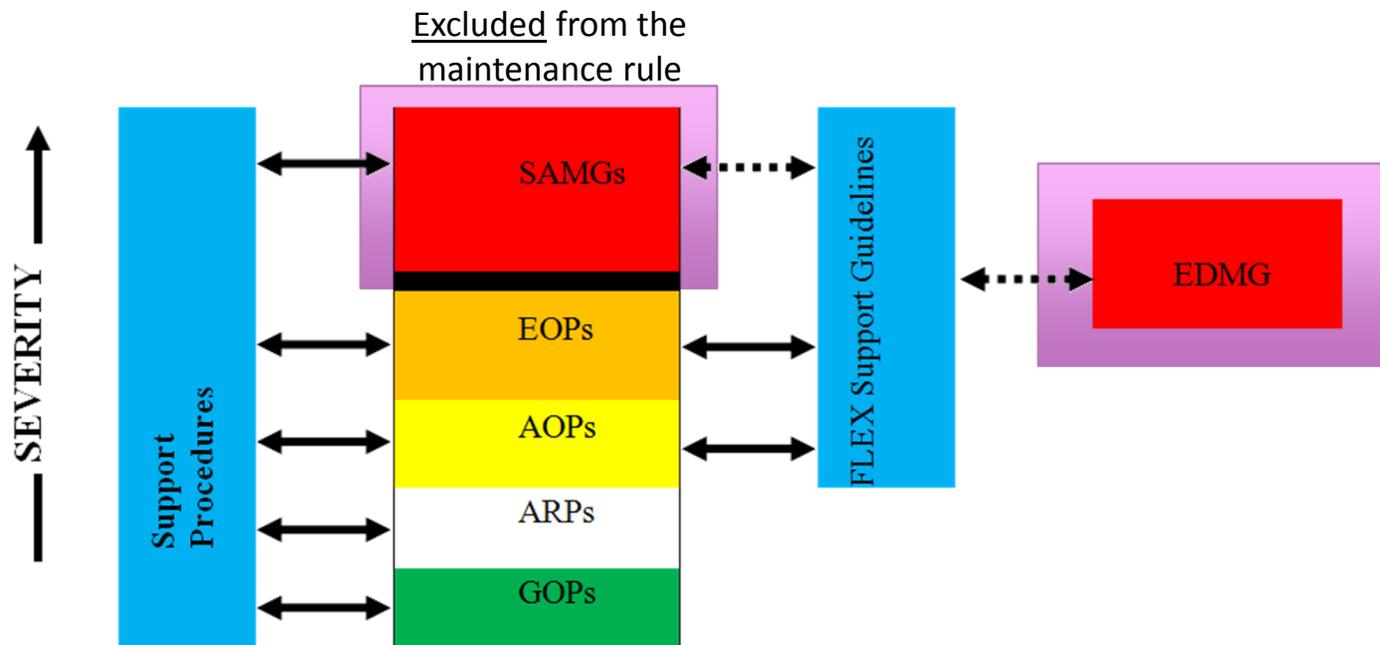
- This step requires utilities to determine which nonsafety SSCs are needed to mitigate accidents or transients as described in the plant's Final Safety Analysis Report (FSAR).

## Section 8.2.1.3

Are the nonsafety-related SSCs used in plant Emergency Operating Procedures (EOPs)?

- Nonsafety-related SSCs that are necessary to be in the Maintenance Rule scope by this paragraph are those explicitly used in the EOPs that provide a function required for mitigation of the event/symptom that necessitated entry into the EOP.
- When the EOPs direct the user to another procedure, the associated SSCs required to perform the EOP mitigating function are included in the scope of the Maintenance Rule.

# Plant Procedure and Guideline Structure



# ELAP Declaration

- Declaration of an ELAP is symptom-based and NOT event-based (i.e. an external event)
- In general, symptoms that lead to an ELAP are:
  - Loss of off-site power (LOOP) either grid or plant centered
  - All design basis installed sources of emergency on-site ac power and alternate ac power sources are not available
  - No prospect for recovery of off-site or on-site power before station batteries deplete

# Elements of Industry FLEX Preventative Maintenance Program

- The utilities are using the EPRI Nuclear Maintenance Applications Center Preventive Maintenance Templates agreed to by the NRC and the industry. Template contains
  - Maintenance task contents
  - Task intervals
  - A synopsis of the associated technical basis for all major components.
- The technical basis provides the reasons for each task and the relationship between the equipment's failure locations, mechanisms, and timing and the influences on equipment degradation.

## Elements of Industry FLEX Preventative Maintenance Program

- NRC acknowledged that industry templates were an acceptable approach for developing maintenance and testing programs.
- NRC stated that the staff will evaluate the resulting programs through the audit and inspection processes.

## Further Improving Safety with FLEX

- Industry is looking to further improve safety using the FLEX and the FSGs for beyond design basis conditions.
  - Providing added defense-in-depth
  - Not to replace equipment required by technical specifications or FSAR

# Examples of Using FLEX beyond Compliance with the Rule

- Use of FLEX+ generators is to provide a redundant means of providing class 4160V AC power to either of the class busses during evolutions where defense-in- depth to the Maintenance of MVAC safety function is challenged, such as diesel generator super outages.
- Utilize FLEX equipment for online and outage risk reduction via staging equipment for specific configurations.
- FLEX pumps staged for spent fuel pool (SFP) injection for defense-in-depth.

## Potential Undesirable Outcomes: Limiting Safety Improvements

- Existing FLEX strategies would be procedurally limited to only external events and complicate operator decision-making
- Further improvements in safety would be excluded from the FSGs increasing complexity and potentially limiting benefits

## Conclusion from NRC Public Meeting on MR Scoping

- “Rulemaking efforts are not likely to redefine EOP contents in a manner that deviates from historic EOP development (i.e. FSGs will not be considered to be a part of EOPs).”

- January 20, 2015 NRC Public Meeting Summary

# Industry Proposed Language

Any non-safety-related SSC or equipment that is relied upon by the licensee solely to support the execution of the FLEX Support Guidelines (FSGs), Severe Accident Management Guidelines (SAMGs), and Extensive Damage Management Guidelines (EDMGs), even if directed by an EOP, is not considered to be used in the EOPs unless relied upon to mitigate accidents or transients as described in Section 8.2.1.2.

## Industry Proposed Language in Sec 8.2.1.3

Any non-safety-related SSC or equipment that is relied upon by the licensee solely to support the execution of the FLEX Support Guidelines (FSGs), Severe Accident Management Guidelines (SAMGs), and Extensive Damage Management Guidelines (EDMGs), even if directed by an EOP, is not considered to be used in the EOPs unless relied upon to mitigate accidents or transients as described in Section 8.2.1.2.

- Limits language to not apply in the case the equipment is being used to replace the minimum SSCs required by the FSAR

# Industry Proposed Language

Any non-safety-related SSC or equipment that is relied upon by the licensee solely to support the execution of the FLEX Support Guidelines (FSGs), Severe Accident Management Guidelines (SAMGs), and Extensive Damage Management Guidelines (EDMGs), even if directed by an EOP, is not considered to be used in the EOPs unless relied upon to mitigate accidents or transients as described in Section 8.2.1.2.

- Limits the language to only clarify what is not considered to meet the criteria of being “used in the EOPs” and not stating final scoping determination as other criteria apply

# Industry Proposed Language

Any non-safety-related SSC or equipment that is relied upon by the licensee solely to support the execution of the FLEX Support Guidelines (FSGs), Severe Accident Management Guidelines (SAMGs), and Extensive Damage Management Guidelines (EDMGs), even if directed by an EOP, is not considered to be used in the EOPs unless relied upon to mitigate accidents or transients as described in Section 8.2.1.2.

- Limits the language to functions only in found in the FSGs, SAMGs, or EDMGs even if directed by an EOP.

# Industry Proposed Language

