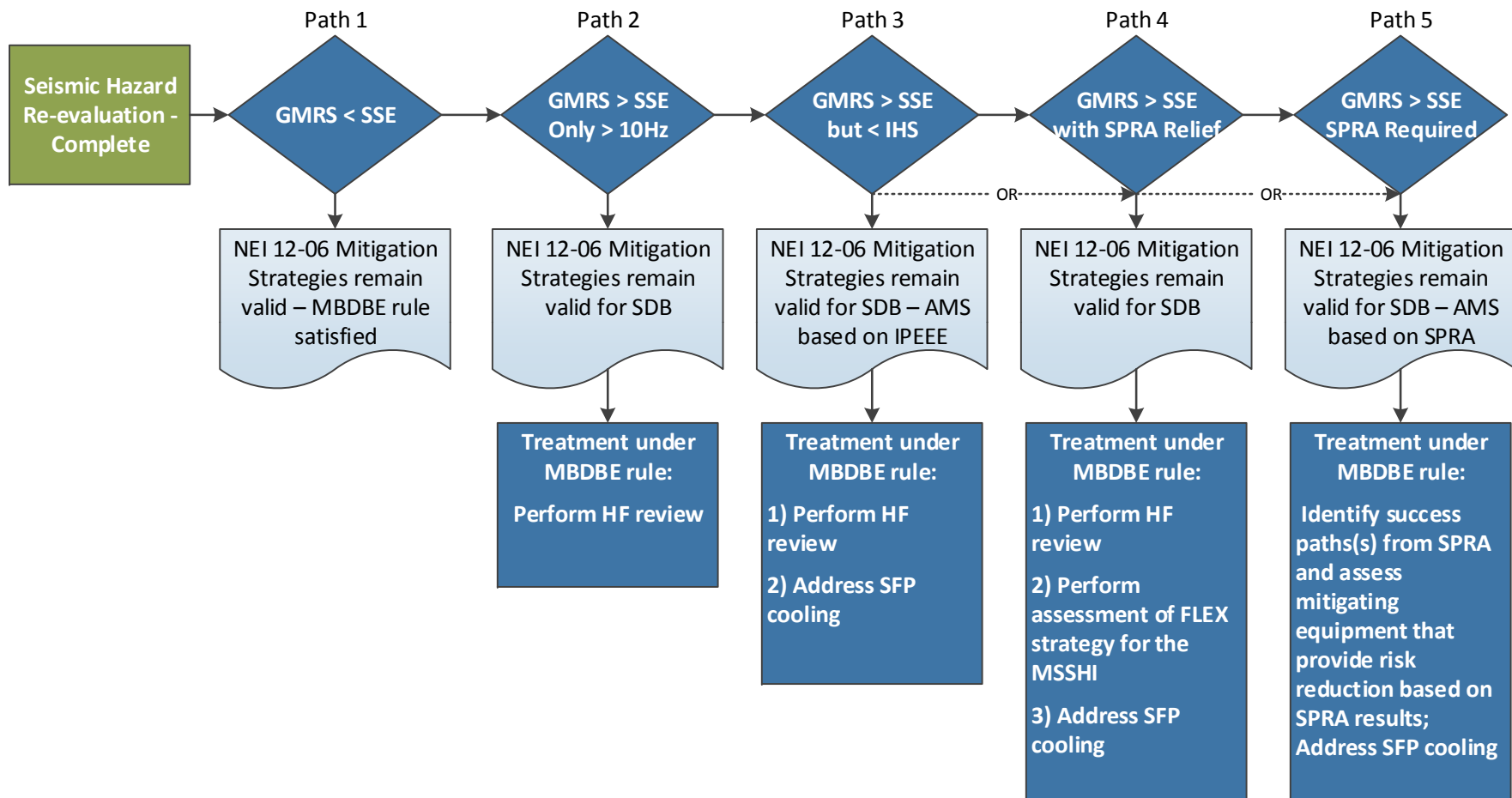


# Overview of Appendix H to NEI 12-06

# Overview

| Path | Description          | 50.54(f) Resolution<br>(Date)                                          | Mitigation Strategy<br>(Date)                         |
|------|----------------------|------------------------------------------------------------------------|-------------------------------------------------------|
| 1    | GMRS < SSE           | Complete                                                               | Complete                                              |
| 2    | GMRS>SSE only >10 Hz | Complete HF review<br>(2015-2016)                                      | Confirm MS Capability<br>(2016)                       |
| 3    | GMRS>SSE - IPEEE     | Complete HF review and<br>SFP evaluation<br>(2015-2016)                | Confirm MS Capability<br>(201?)                       |
| 4    | GMRS>SSE - no SPRA   | Complete HF review and<br>SFP evaluation<br>(2017)                     | Confirm MS Capability<br>(201?)                       |
| 5    | GMRS>SSE - SPRA      | Complete SFP evaluation<br>(2015-2017)<br>Complete SPRA<br>(2017-2020) | Alternate MS<br>Based on SPRA Insights<br>(with SPRA) |



# Path 1: GMRS < SSE

## Mitigation Strategy

- NEI 12-06 mitigating strategies for existing DBE demonstrate reasonable protection for the reevaluated seismic hazard
- No additional actions required to demonstrate reasonable protection under MBDBE rule

## Path 2: GMRS > SSE at frequencies > 10 Hz

### Mitigation Strategy

- NEI 12-06 mitigating strategies performed for existing DBE demonstrates reasonable protection for the reevaluated seismic hazard between 1-10 Hz
- Perform HF review and address SFP cooling
- No additional actions required to demonstrate reasonable protection under MBDBE rule.

# Path 3: GMRS > SSE - IPEEE demonstrates seismic capacity above GMRS

## Mitigation Strategy

### Option 1:

- Employ alternate mitigating strategy (AMS) that relies on IPEEE to maintain the key safety functions of core and spent fuel pool cooling and containment.
  - The IPEEE evaluated core cooling and demonstrated that the plant can safely shut down with redundant success paths with plant seismic capacity above the GMRS
- Perform HF review and address SFP cooling

### Option 2:

- Follow Path 4 or Path 5 (if SPRA developed)

# Path 4: GMRS > SSE – SPRA not required

## Mitigation Strategy

### Option 1:

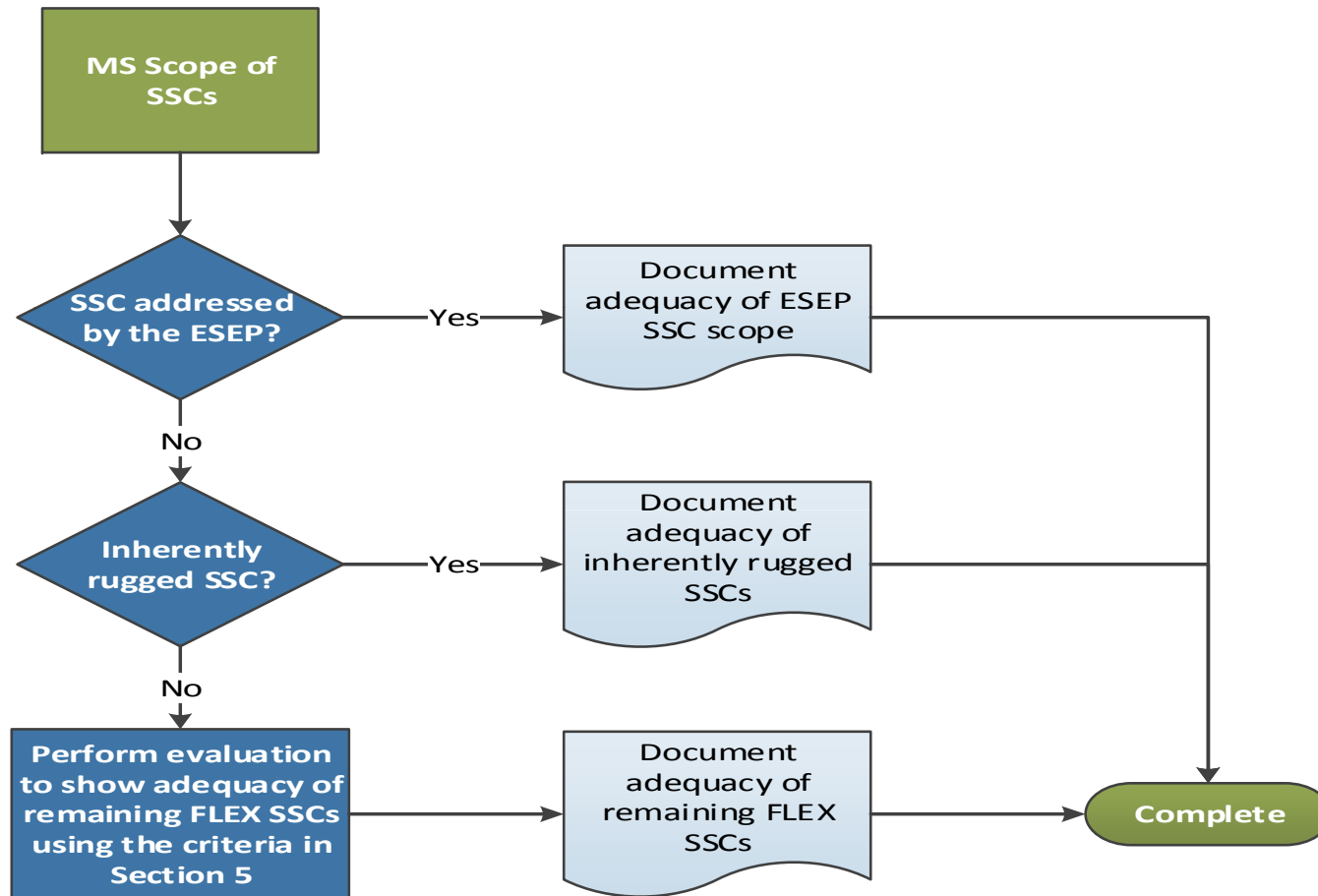
- Perform mitigation strategy assessment (MSA) to demonstrate SSCs are seismically robust up to the GMRS earthquake level.
  - The RLGM which formed the basis for the ESEP demonstrates reasonable protection to the new seismic hazard for the SSCs addressed within the ESEP.
  - These methods will include use of past experience to justify qualitative criteria for seismic ruggedness and also a more quantitative approach to demonstrate SSCs are seismically robust up to the GMRS earthquake level.
  - For those SSCs which are part of the MSA but were not included in the ESEP review, methods will be developed to demonstrate reasonable protection.
- Perform HF review and address SFP cooling

### Option 2:

- Plants that have performed an SPRA can elect to follow Path 5

# Path 4 MSA

## Path 4 Seismic Evaluations





# Path 5: GMRS > SSE – SPRA required

## Mitigation Strategy

### Option 1:

- Employ AMS which will use SPRA results to maintain key safety functions of core cooling and containment
- SFP cooling will be addressed
- The SPRA results will be used to determine if there are ELAP events that significantly contribute to SCDF and SLERF and to demonstrate the ability of the plant equipment to survive the event and contribute to the coping strategy.
- Licensees that perform a seismic PRA under Path 5 will identify success paths of installed equipment that can cope with the ELAP indefinitely or until off- site resources are available.
  - A method is being developed to evaluate the need for considering the benefit of additional reasonable protection based on SPRA results without consideration of FLEX Mitigation that rely on FLEX storage structures, haul paths, connection points and non-permanently installed plant equipment
  - For plants where ELAP sequences are important contributors to the overall seismic risk, the use of FLEX mitigation should be assessed to determine if it is effective in substantially reducing the risk from ELAP events.
  - If FLEX mitigation could potentially result in *substantial reduction* in seismic risk for ELAP events, the FLEX mitigation capability should be evaluated for the beyond-design-basis seismic hazard and/or other options for reducing ELAP risk (e.g., through permanent plant design modifications or through the augmentation of existing FLEX mitigation capabilities).

### Option 2:

- Evaluation of mitigation strategy consistent with NRC Regulatory Guide for MBDBE rule (DG-1301) or an alternative approach

# Path 5 MSA Using SPRA

