SECY 11-0137 Flooding Items

Problem Statements, Success Criteria, Deliverables, and Interim Steps

SECY Item 2.1

SECY Items:

"2. Interact with stakeholders to inform NRC's process for defining guidelines for the application of present-day regulatory guidance and methodologies being used for early site permit and combined license reviews to the reevaluation of flooding hazards at operating reactors."

"4. Develop and issue a request for information to licensees pursuant to 10CFR50.54(f) to (1) reevaluate site specific flooding hazards using the methodology discussed din item 2 above, and (2) identify actions that have been taken or are planned to address plant specific issues associated with the updated flooding hazards (including potential changes to the licensing or design basis of a plant)."

Intent:

Develop a method and guidance to:

1. Reevaluate the flooding hazards for existing plants using the requirements being imposed on new reactors.
2. Compare a plant's existing licensing and design basis and protection features for flooding to the flooding hazards determined by item 1.
3. Identify vulnerabilities and actions to address them

Problem Statement:

"Implementation guidance and acceptance criteria do not exist to guide licensees through a comparison of their existing flooding hazard evaluation results against the flooding hazards determined by use of current regulatory guidance and updated methodologies used for new plant early site permits and combined license reviews or to guide licenses in the selection of associated actions."

Assumptions:

1. The evaluation performed to respond to this item is beyond existing plant design and licensing bases.
2. The guidance prepared will use either
    a. a performance based approach that allows use of best estimates in the analysis, and redundancy, flexibility, and diversity in mitigation, or,

b. a scoping study to determine the maximum hazard that would have to be addressed using a diverse and flexible mitigation approach (industry's proposed "FLEX" approach).

3. Any actions taken or planned as a result of the evaluation are considered beyond existing design and licensing basis; they are not considered changes to existing design or licensing basis.
4. The guidance takes into account that the evaluation is being performed for an existing plant as opposed to a new design.
5. Only external flooding will be considered.

Success Criteria:

Guidance endorsed by the industry and NRC is developed for use by licensees to:

- Determine their plant's flooding hazards using current regulatory guidance on flooding and current methodologies
- Compare their licensing bases and as-built design to the flooding hazards determined by the activities in the first bullet
- Identify plant specific vulnerabilities
- Determine acceptable approaches for mitigation of identified vulnerabilities

Deliverables for NRC Endorsement or Information:

- Guidance that can be used by all licensees to:
  - Reevaluate a plant's flooding hazards using updated inputs and assumptions as compared to those used in the original flood hazard evaluation for the site. The evaluations will be performed using current guidance that is applicable to early site permit and combined license reviews.
  - Compare their plant's existing protection features to the updated flooding hazards
  - Assess mitigation options for addressing identified vulnerabilities
- Acceptance criteria (e.g., when does a vulnerability need to be mitigated or reported as part of the 50.54(f) response, how should uncertainties be treated, what grade of equipment is required to implement actions, etc.)
- Estimate of the time required to perform the evaluation (input to the 50.54(f) letter response times)

Note: If the "FLEX" approach is endorsed by the Fukushima Steering Committee, an alternate strategy will be developed that avoids a detailed re-evaluation and instead estimates the flood hazard and identifies a set of equipment, staging, and connection requirements that will mitigate any flooding hazard.

SECY Item 2.3

SECY Items:

1. *"Engage stakeholders to inform development of a methodology and acceptance criteria for seismic and flooding walkdowns; and*

2. *Develop and issue a request for information to licensees pursuant to 10CFR50.54(f) to (1) perform seismic and flood protection walkdowns to identify and address plant specific issues (through corrective action program) and verify the adequacy of monitoring and maintenance for protection features and (2) inform the NRC of the results of the walkdowns and corrective actions taken or planned."*

Intent:

Develop guidance for:

1. Walkdowns that compare a plant's existing flood protection configuration with the plant's design and licensing basis for flooding.

2. Evaluations that assess the adequacy of monitoring and maintenance of the flooding protection features.

Problem Statement:

"Walkdown criteria and methodology do not exist to consistently assess whether existing flood protection and mitigation measures are available, functional, and adequately maintained"

Assumptions:

1. The walkdowns will compare current plant configuration and procedures to existing design basis documents (e.g., current drawings and procedures).
2. The effect of beyond design or licensing bases flooding will be addressed in the response to SECY item 2.1.
3. Only external flooding events will be considered.

Success Criteria:

A methodology, endorsed by the industry and NRC, is developed to guide licensee walkdowns which will:

- Evaluate whether existing plant design basis flood protection and mitigation measures are available, functional, and adequately maintained and
- Identify plant specific deviations or weaknesses.
- Define actions to be taken when deviations or weaknesses are identified.

Deliverables for NRC Endorsement or Information:

- Walkdown methodology that compares existing flood protection features with the existing design and licensing basis for flooding, including
    - Determining walkdown scope
    - Pre-walkdown actions (e.g., identification of walkdown scope, procedure reviews, drawing collection)
    - Pre-job brief content
    - Walkdown team composition
    - Walkdown personnel qualifications
    - Determining acceptability of PM programs (e.g., type of maintenance/test, frequency of PM, confirmation of PM performance, etc)
    - Equipment access considerations
    - Viability of mitigation strategies
    - Documentation requirements
- Specific acceptance criteria for the evaluation of barriers, penetrations, drains, sump pumps and other equipment credited for flood protection on drawings or procedures (when does an observation become an "issue" that must be reported in the 50.54(f) response - such as flood barrier degradation, acceptable frequencies for PMs, etc.)
- Estimate of the time required to perform the walkdown as input to the 50.54(f) letter response time
    - Allowance for additional time to gain access to equipment in restricted areas should be considered)