

Comments on Flooding Aspects of 50.54(f) Letter

January 18, 2012

Questions on Letter: Item 2.1

- Letter requests that the SFP also be evaluated for integrity and functionality
 - Please clarify what is meant by SFP “integrity” and how it could be affected by flooding
- Letter requests an evaluation of loss of UHS due to low water level. NRC slides presented during the January 13 Steering Committee meeting stated that loss of UHS water source would be addressed in tier 2.
 - Industry interprets that the item 2.1 response would evaluate loss of required mechanical components due to flooding (pumps, valves, etc.)

Questions on Letter: Item 2.1

- **Evaluation criteria should not change while we are developing guidance and completing analyses**
 - **Draft letter states that NRC would evaluate the issue of upstream dam failure if GI-204 is approved**
 - Does only ANS 2.8 1992 apply?
 - Are there other applicable guidance documents?
 - **Draft letter discusses the RG 1.59 revision**
- **Please clarify what recent state and federal agency analyses can be used for dam failures (pg. 12, #3)**
 - **Hydrology or structural?**
 - **How recent?**
- **NRC should specify the Codes, Standards, and other guidance, including exceptions, that will apply to flood hazard evaluations before utilities begin their work**
 - **50.54(f) letter should state that flood evaluation codes, standards, reg guides, etc as of January 1, 2012 apply**

Questions on Letter: Item 2.1

- It is not clear whether the “Requested Information” section is a project description or the information needed from the utility
- Industry plans to use FLEX as part of the beyond design basis mitigation features planned to address item c in information request #5
- Industry expects to be able to engage the NRC on the definition of vulnerability as described in the draft letter
 - The definition should be included in the guidance prepared for licensee response

Questions on Letter: Item 2.1

- Information requests 2, 3, and 4 seem to provide different details on the same request (complete an analysis and report the results).
 - What different information is being requested by these three?
 - What validation is expected for evaluation inputs and software?
 - What type of justification is expected to screen out hazards?
- Can new plant evaluations be used for existing plants on the same site?

Item 2.1 Response Time

- **Process for dealing with beyond design basis flooding hazard results that are greater than CLB**
 - **Prepare generic guidance (by ~ September 30)**
 - **Obtain NRC endorsement of the FLEX guidance**
 - June 30, 2012
 - **Complete guidance including addressing NRC comments during development**
 - FLEX guidance endorsement plus 90 days
 - **Obtain NRC endorsement - TBD**
 - **Licensee submittal**
 - **Complete flooding hazards evaluation**
 - **Develop site implementation plan for additional protection/mitigation**
 - 18 months after completing flood evaluation
 - **FLEX implementation by mid 2014**

Item 2.1 Schedule

- **Schedule for response to item 2.1 activities 1 through 4**
 - **Generic activities**
 - **Prepare guidance on the process for flooding evaluations for NRC endorsement**
 - 3 months
 - **NRC endorsement**
 - TBD
 - **Utility specific activities (18 to 32 months per site - highly site specific)**
 - **Screening hazards and contracting**
 - 3 months
 - **Evaluation preparations (scoping, data collection, etc.)**
 - 4 to 6 months
 - **Analysis completion by contractor (based on contractor input)**
 - 6 to 18 months
 - **Evaluate results (internal review and acceptance of vendor report)**
 - 3 months
 - **Write and approve licensee response**
 - 2 months
 - **Additional time to complete low water level evaluations**
 - **Industry completion for last plants (3 times average site completion time ~ 6 years)**
 - **Sites: 67**
 - **Independent evaluation resources: ~20 site evaluations performed at one time**
 - **FLEX implementation by mid 2014**

General Evaluation Guidance

- **Purpose**
 - Introduce flooding evaluation process to utility personnel
 - Support consistency in utility understanding of the process
- **Concept for Content**
 - **Scoping considerations**
 - Identify appropriate flooding mechanisms
 - Assess the level of anticipated evaluation
 - **Pointers to NRC guidance on the process**
 - NUREG/CR-7046
 - 50.54(f) external flooding descriptive material
 - **Identification of important additional reference material**
 - **Clarification points to support general understanding of selected references**

Questions on Letter: Item 2.3

- **Draft letter includes checking of several items that are not within the CLB for some or most plants**
 - **Determination of cliff edge effect is beyond the CLB and, if necessary, should be part of the response to item 2.1 (requested information #1)**
 - **Not all plants are designed for cold shutdown in CLB (requested information #6)**
- **Protecting cable trenches from water ingress – please clarify. Protection of buildings from leakage via cable conduit needs to be checked, not short term submergence of cables**
- **Room water level indication should only be checked if credited in current design basis to prevent or mitigate external flooding**
- **Clarify what is meant by “performance deficiencies” (requested actions, #3)**

Questions on Letter: Item 2.3

- Evaluation of SFP integrity – please clarify. Protection of cooling ability is expected.
- Walkdown guidance will evaluate manual actions to determine that they are adequate and can be completed within the expected time considering adverse conditions that could reasonable be expected to occur
- Walkdown team composition includes:
 - Personnel performing the walkdown and
 - Personnel identifying the requirements and evaluating the results
- Guidance should incorporate OE when that OE can affect the validity of the CLB or the adequacy of inputs and assumptions in the CLB
- Clarify development of walkdown scope (building elevations)

Questions on Letter: Item 2.3

- **What is the intent of the peer review process required by item 10?**
 - **Industry is developing a template for the walkdown guidance and response template which uses peer review “up front” and establishes consistency in approach.**
 - **Plant processes require independent verification when necessary and should be relied upon to determine when this is appropriate**

Questions on Letter: Item 2.3

- **Schedule for response to item 2.3**
 - **Generic activities**
 - **Prepare walkdown guidance for NRC endorsement and reference in utility response**
 - 90 days
 - **NRC endorsement**
 - **TBD**
 - **Utility specific activities (270 days after NRC endorsement)**
 - **Development of plant implementing document from generic guidance**
 - 30 days
 - **Walkdown preparations (scope, assignment of teams, training, clearances, work package development, scaffolding, etc.)**
 - In parallel with implementing document preparation plus 60 days
 - **Walkdown performance (allowing for access restrictions and outage impact)**
 - 60 days
 - **Evaluate walkdown results**
 - 60 days
 - **Write and approve walkdown report**
 - 60 days

Other External Events

- **Flooding Task Force could start to address other external events after completion of beyond design basis guidance**
 - **September 30**
- **Flooding task force has spent 6 months to preparing for issue of 50.54(f) letter**
- **Response times for other external events should be delayed by one year from the times established for items 2.1 and 2.3 for flooding**

Flooding Walkdown Guidance

January 18, 2012



Current Status

- **Guidance based on approach to IER 11-1 walkdowns**
- **First draft prepared in December**
- **Currently being reviewed by task force**
- **NRC comments on key concepts will need to be addressed**

Guideline Content

- **Introduction**
- **Purpose**
- **Definitions**
- **Scope**
- **Methodology**
- **Acceptance Criteria**
- **Monitoring and Maintenance**
- **Reporting Results**

Purpose

- **Verify that permanent and temporary SSCs and related procedures credited in the external flooding licensing basis are in acceptable condition and capable of performing their intended function**

Definitions

- **Vulnerability**: A condition that prevents a plant flood protection feature from performing its intended function during a design or licensing basis flood event. These conditions shall be entered into the Corrective Action Program.

Definitions

- **Inaccessible areas are areas that cannot reasonably be inspected due to significant personnel safety hazard, Very High Radiation Areas, major equipment disassembly, or no reasonable means of access (e.g., buried).**

Scope

- **Compare current plant configuration and procedures to features in existing design and licensing basis that are credited for protection and mitigation of external floods**
 - **Comparison to UFSAR, current drawings, and procedures**
 - **Inspection does not include the initiators that cause the floods**
 - **Inspection of upstream dams WILL NOT be required, but inspection of the flood protection features that are credited to protect against or mitigate the effects of a dam failure WILL BE required**

Methodology

■ Protection features

— All

- Assess the capability to perform the required function (visual inspection of SSC, review of operating procedure)
- Any observation that cannot be immediately judged as acceptable must be entered into the Corrective Action Program for disposition

— Temporary

- Verify accessibility, transportability, and the staging and function of necessary supplies

Methodology

- **Functional tests/PM's**
 - **All equipment**
 - **Assess appropriateness of the test**
 - **Tests completed with acceptable results within their required frequency (if applicable) and at least once are acceptable**

Walkdown Team Training

- Individuals will be trained for examinations of plant structures, systems, and components within the walkdown scope
- Individuals will be trained to this guidance and to the flooding related recommendations in SECY 11-0137 items 2.1 and 2.3

Acceptance Criteria

- **Aligned with the definition of vulnerability**

Estimated Schedule for Guidance

- **Provide draft to NRC – Fri, Feb 17**
- **Requested NRC comments ~ two weeks**
- **Meeting to discuss comments – Feb 27 – Mar 2**
- **Submit final draft to NRC**
- **Meeting to discuss final draft ~ Mid April**
- **Final guidance available to utilities in time for reference in 90 day response**