11/19/99

①

ISC - Nov. 12 letter.

John Hanon

- HLs
- Seismic

Next Steps: - Bill Henries
- Mike seismically-induced loss of coolant scenarios (→ No catastrophic failure)
taken out of seismic value.
- Mike check. 5% → spot failure
95% → loss of SFPC & LOOP } 3 SSE
LOOP? → non-recoverable.

ernal

ICP ★ - Bill Henries - still long term event ⇒ possible offsite response can recover.

→ Action NRC: Re-look at seismic/HR values
- Glenn - does not yet reflect HE rates.

★ - need additional meeting/release human error Gautam's draft.

Atherton - ① degradation of SFP ~~[illegible]~~ - (Gautam - Increase 20% early years)
② differences in SFP design - yes - checklist.
① no impact on structural function - even if cracked - short term
② concrete/rebar degradation - seismic checklist.

[30 gpm - gas powered pump <1000] - Mylanker

NEI risk criteria
Action

Q1120

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~~Criticality~~
~~[illegible]~~ -

RI decision-making
- need to make equivalent ~~to~~ ~~[illegible]~~ of ALERF

- Keep some baseline level of offsite EP - not part of technical basis - part of decision-making process.

- using top of ~~[illegible]~~ fuel would be simplifying but lack licensees ~~with~~ using top of fuel.

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NEI

RC
tion: - interaction w/ Gautam & Bill Harries
- Eron kpt → Price Anderson → derivation to get to LERF
Bill tech care eq. → SECY already approved but
~~they~~ ~~are~~ is being released at.
- Accountance vs. frequency.
"fair outside commission policy"

↳ Rich → not outside policy.
Mark Ewan → easier approach is freq.

Atherton
① defense-in-depth - what do you mean by DID for SFPs?
Rich - look at op. plant DID → deep level.
② reactor do PRA's take into account quality of equipment.
Rich/Gautam - yes.
↳ in our study - look general info.
③ Given that consequences to public - why did you looking at DID - by consequence accounts.

SEISMIC ANALYSIS

- ✔ JUNE 1999 DRAFT TECHNICAL STUDY
  - ✓ 3 x SSE (.4 - .5 g range) est. = 2E-5/yr

    Challenge pool integrity (5%) = 1E-6/yr

    Total seismic contribution at most CEUS sites: 2E-6/yr
- ✔ AUGUST 1999 NEI CHECKLIST
  - ✓ 7 checklist items
  - ✓ excellent start
- ✔ ITQR
  - ✓ adequate checklist can be developed

    Use mean EPRI & LLNL93 hazard estimates

    Envelope seismic risk < 3E-6 (.5 PGA or 1.2 PSA)
  - ✓ avoid detailed fragility review for most CEUS sites
- ✔ ADDITIONAL CONSIDERATIONS
  - ✓ strengthen checklist

    Out-of-plane flexural and shear failure modes

    Level 2 screening requirements for in-plane flexure and shear
  - ✓ detail fragility for 6 CEUS sites (above ground pools with walls not backed by soil backfill)
  - ✓ sites west of Rocky Mountains
- ✔ NEXT STEPS
  - ✓ NEI actions
  - ✓ Staff actions

HEAVY LOAD DROP ANALYSIS

- ✔ ANALYSIS ASSUMPTIONS AND BASES
  - ✓ employs more recent Navy data
  - ✓ includes human error evaluation for improper rigging

    Refines analysis in NUREG - 0612
  - ✓ will include mean value estimate for compatibility with RG 1.174
- ✔ CURRENT ESTIMATE OF FREQUENCY
  - ✓ SFP Loss of Inventory per year for 100 lifts for single failure proof system

    2.8 E - 8/ry (low) 2.1 E - 6/ry (high)
  - ✓ for non-single failure proof system (based on NUREG - 0612)

    1.0 E -7/ry (low) 7.5 E - 5/ry (high)
- ✔ NEI INCIDENT RATE DATA
  - ✓ used to requantify the fault tree

    Minimal change in the resulting frequency estimate

    1.5 E - 8/ry (low) 2.9 E - 6/ry (high)
- ✔ NEI COMMITMENT TO PHASE II OF NUREG - 0612
  - ✓ Administrative restrictions on heavy load movements

    Procedures to control operations near SFP

    Cask drop analyses for non-single failure proof cranes
- ✔ COMMITMENT TO PHASE II PROVIDES LOW PROBABILITY AND A DIVERSE MEANS OF PROTECTION WHICH INDICATES THERE IS REASONABLE ASSURANCE THAT RISK IS ACCEPTABLE
- ✔ FINAL RESULTS SUBJECT TO INDEPENDENT REVIEW

CRITICALITY ANALYSIS

- ✔ PUBLIC STAKEHOLDERS RAISED CONCERN
  - ✓ June 1999 DRAFT Technical Study

    Considered several possible mechanisms

    Closer spacing of stored assemblies
    Loss of fixed poison (boral/boraflex cover plates)
    Loss of cladding integrity
    Personnel actions in response to an accident

    Incredible or highly unlikely

- ✔ ITQR
  - ✓ additional mechanisms proposed

    Zirc fire induced fuel pellet reconstitution

    Rack deformation (seismic event, heavy load drop, melting of boral plates)

- ✔ FUTURE ACTIONS
  - ✓ assess potential for criticality
  - ✓ evaluate consequences
  - ✓ assess likelihood