U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Path Forward on Generic Safety Issue (GSI) 191 Pressurized Water Reactor Sump Performance

Presented by:

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Presented to:

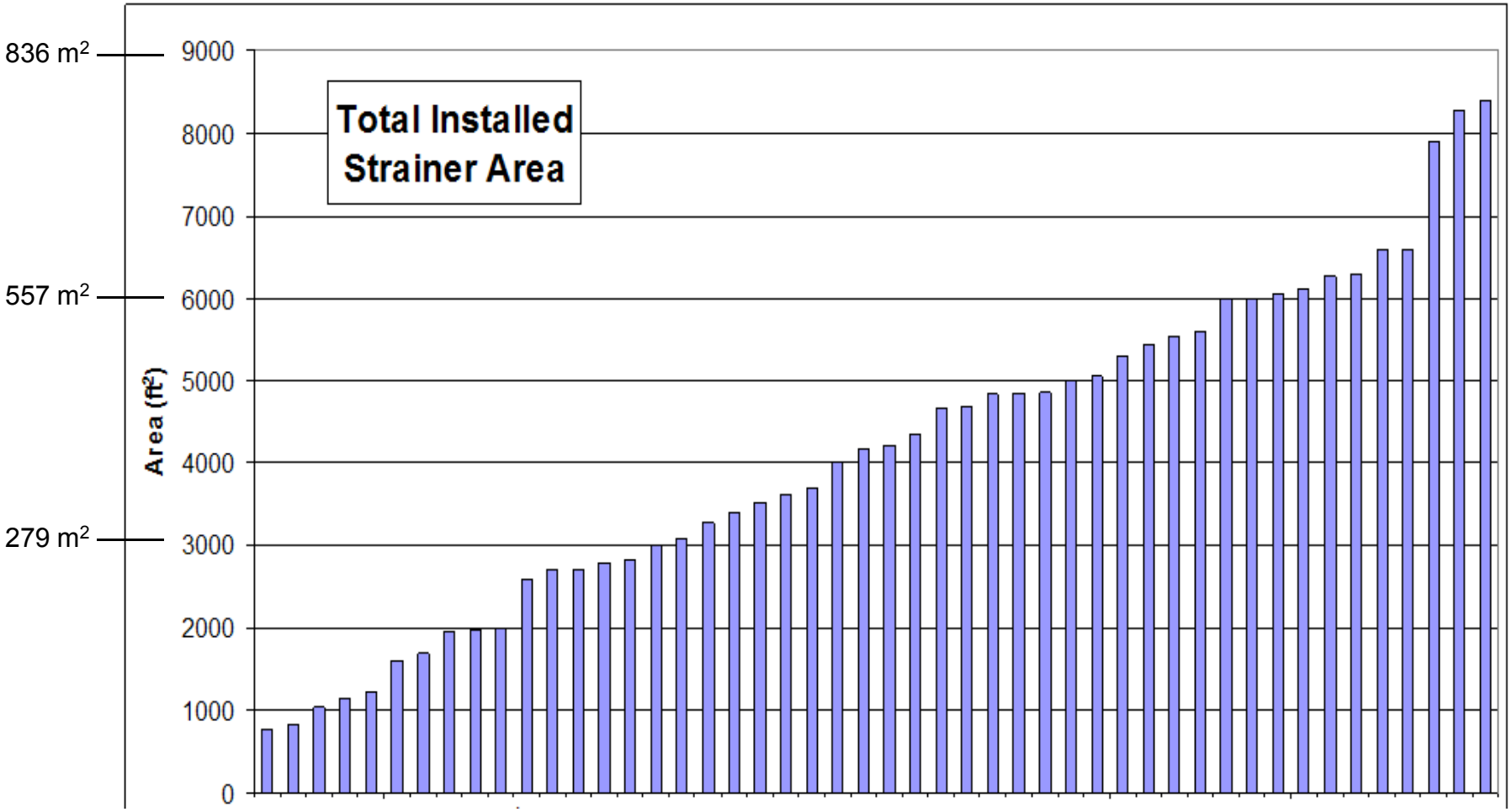
Public Meeting on GSI-191

January 15, 2009

Current Status of GSI-191

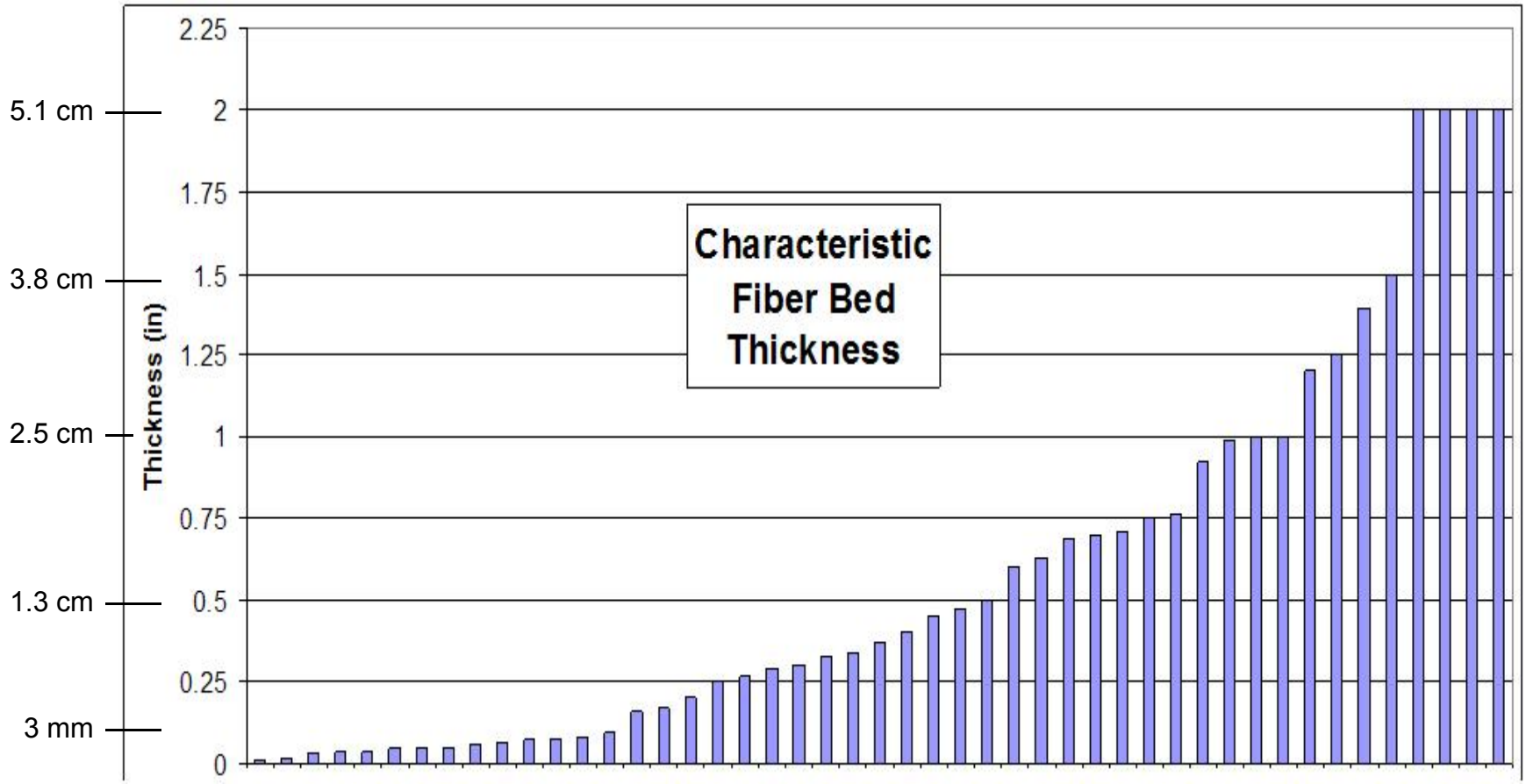
- All licensees have installed significantly larger emergency core cooling system (ECCS) sump strainers
- Many licensees have done, or will do, other modifications, for example:
  - remove insulation
  - replace sump buffer
- Strainer testing activities have been completed for many licensees
- So why aren't we done?

U.S. PWRs
Total Installed Strainer Area



(Preliminary Draft Data)

U.S. PWRs
Potential Fiber Bed Thickness



(Preliminary Draft Data)

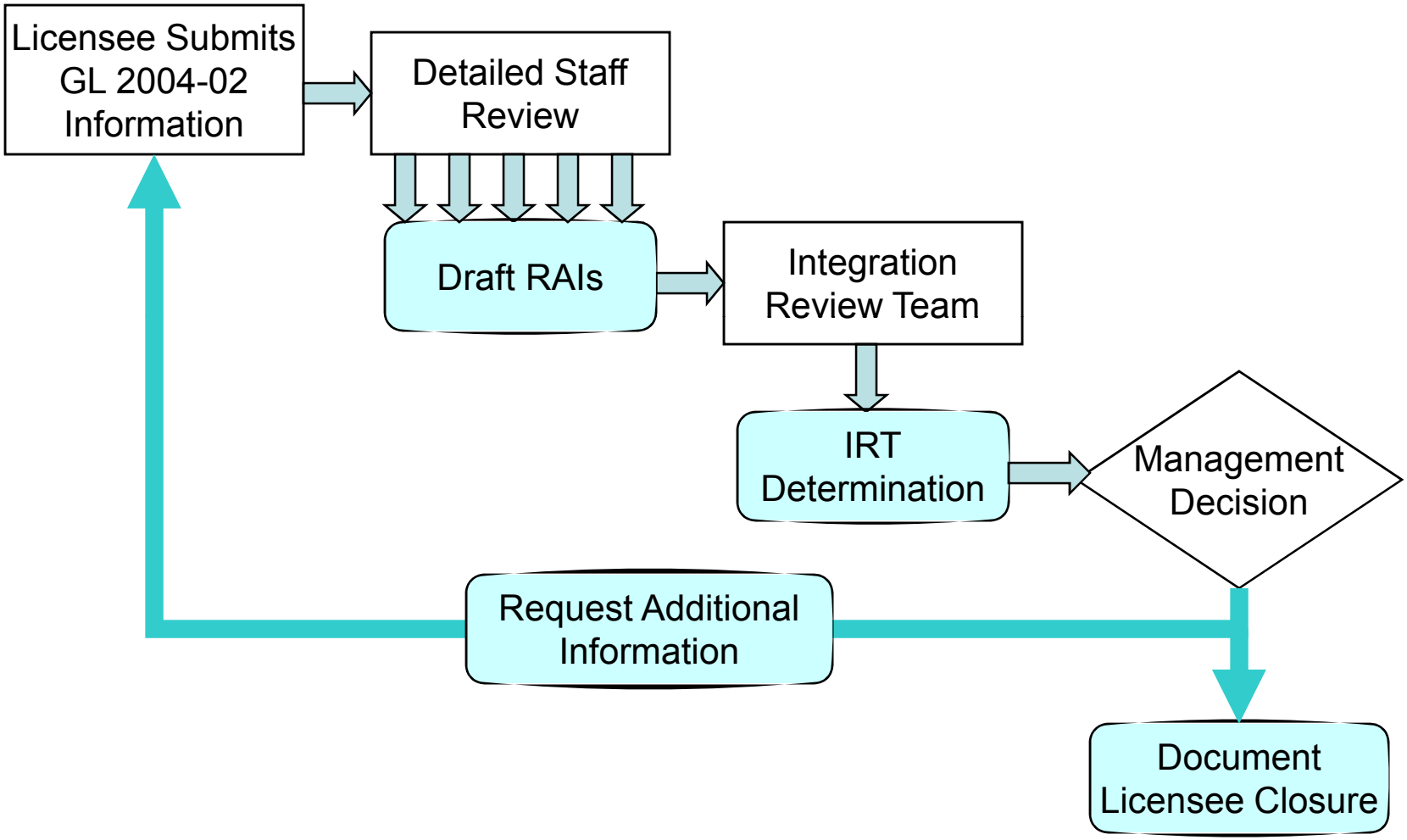
Current Status (Continued)

- Most licensees requested extensions beyond December 2007 to complete certain corrective actions
  - Integrated head loss testing, including chemical effects
  - Downstream effects analyses
  - Plant modifications
- Many extensions have since expired, indicating licensees believe they have fully addressed the sump performance issue
- All plants submitted supplemental responses to Generic Letter (GL) 2004-02 in February/March 2008
- The NRC staff is nearing completion of the initial review of the licensee supplemental responses

Review Process

- Detailed review of licensee responses in each subject area
- Follow-on review by Integration Review Team (IRT) to attempt to reach holistic conclusion based on evidence presented by licensees as to whether each licensee has adequately addressed the sump performance issue
- Intention was to get beyond technical questions that would not impact the overall conclusion of safety and compliance

Review and Closure Process



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Current Review Results

- The staff has informed several licensees with "low-fiber" plants that the staff has few or no additional questions for those plants
- Most other plants have received, or will receive in early 2009, requests for additional information (RAIs)
- Some plants will be "re-reviewed" using latest information rather than send out RAIs based on earlier information
- "Placeholder" RAI for in-vessel downstream effects, since most plants relied on WCAP-16793-NP

Evaluation of Results So Far

- Did not result in conclusion that most plants were complete
  - Many submittals incomplete
  - Many submittals based on test and evaluation protocols that staff has not found to be conservative or prototypical
  - Licensee's holistic safety and compliance case not made or not clearly adequate because based on fundamentally flawed test and evaluation practices

End Point for Reviews

- Each licensee has provided or will provide, as applicable:
  - Responses to RAIs on the licensee's GL supplemental submittals
  - Responses to open items identified in NRC staff audits
  - Final supplemental response after all testing and evaluations completed
  - Submittal addressing in-vessel downstream effects after WCAP-16793-NP issued

Review of RAIs and Additional Responses

- Objectives – Avoid multiple additional rounds of review; resolve remaining technical questions for each licensee by early 2010
- Will review additional information provided by each licensee
- Review for a given plant will not occur until that plant has indicated it considers its testing and evaluation complete
- If IRT unable to reach holistic conclusion of adequacy based on information presented by licensee, NRC will identify issues to licensee
- Subsequent public meeting to discuss issues and licensee's path forward
  - Licensee may make revised holistic safety case
  - NRC will not make the case for the licensee
- Letter from licensee identifying path forward
- Other regulatory actions possible if above not fruitful

In-vessel Downstream Effects

- Additional “bounding” testing complete or nearly so
- Revised topical report submittal spring 2009
- Final safety evaluation (SE) by end of 2009
- Licensee submittals addressing whether bounded (or not) 90 days after issuance of final SE
- NRC review of submittals complete by summer 2010

Closure Activities

- NRC will review supplemental information/RAI responses as discussed
- NRC Regions can inspect implementation of modifications and other commitments as part of Reactor Oversight Program
- NRC will issue a closure letter to each licensee when sufficient information is provided to close the issue for that plant
- After all licensees have been issued closure letters, GL 2004-02 will be formally closed – expected to occur mid 2010
- Some modifications will be made after planned issue closure
  - NRC will track all commitments to completion
  - NRC considering additional steps/conditions for extensions beyond end of 2009