

4/1/99

**WORKING GROUP PLAN  
TO SUPPORT  
TECHNICAL ANALYSIS OF SPENT FUEL POOL ACCIDENTS  
FOR DECOMMISSIONING PLANTS**

Background:

Permanently shutdown reactors have a significantly reduced risk to the public. As such, decommissioned plants have requested exemptions from regulations, particularly in the areas of emergency preparedness, safeguards, and insurance indemnity. To date, the staff has reviewed the licensee's requests on a case-by-case basis. A predictable, risk-informed review standard has not been established for issues associated with spent fuel pool accidents at decommissioned plants.

Mission Statement:

The technical staff will review and evaluate available technical information and methods to use as the risk-informed, technical basis for reviewing exemption requests and rulemaking related to EP, safeguards, indemnification, and other issues. This activity may also identify the need for follow up research or activities to address areas of large uncertainty.

Output:

- 1) A risk informed, technical basis which can be used for reviewing exemption requests and supporting rulemaking related to EP, safeguards, insurance indemnification, and other issues for decommissioned plants.
- 2) Identification of any follow up research or other activities that need to be performed to address any large uncertainties in the available information and further technical support needed.

Outcome:

A risk informed, technical basis pertaining to spent fuel pool issues, that supports predictable methods of granting relief to decommissioned plants in the areas of EP, safeguards, insurance indemnification, and other issues while optimizing expenditures of licensee and staff resources.

Milestones:

- |            |   |
|------------|---|
| April 1    | Establish working group                     |
| April 13   | Meet with NEI & the public                  |
| April [20] | Mid-review status report                    |
| May [7]    | Complete review of existing information     |
| May [17]   | Develop assessment of existing information  |
| May [17]   | Identify additional information required    |
| May [25]   | Develop technical basis for interim reviews |
| June 18    | Respond to SRM                              |

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Decommissioning Technical Working Group:

SFP systems/Coordination:	Diane Jackson, SPLB Vonna Ordaz, SPLB Chris Gratton, SPLB
Decomm. Projects contact:	Richard Dudley, PD4D
Thermal Hydraulics&Codes:	Joe Staudenmeier, SRXB Chris Boyd, RES assistance
Probability:	Glenn Kelly, SPSB
Dose Assessment:	Jim O'Brien, HOHB Jason Shapiro, RES assistance
Fire Protection	Ed Connell, SPLB
Criticality	Larry Kopp, SRXB
Maintenance Rule and QA	Wayne Scott, HQMB
Structural	?, ECGB

## Working Group Plan:

- 1) Re-evaluate the probabilities of SFP scenarios.
  - Determine potential initiating events and accident scenarios. (SPSB)
  - Determine the site limiting scenarios to analyze. (SPSB)
  - Evaluate the use of a seismic margins assessment to analyze the robustness of the SFP structure (ECGB)
  - Evaluate the effects of mitigative actions on the probabilities of the scenarios. (SPSB)
  - Consider the effects of Maintenance Rule and Quality Assurance Programs. (HQMB)
  
- 2) Re-evaluate the spent fuel heat up analysis.
  - Evaluate the spent fuel heat up analyses to determine if they represent current operating and storage practices and if they are applicable to decommissioned plants. (SPLB/SRXB)
  - Evaluate the use of existing computer codes that, if applied appropriately, could be used to analyze the heat up of the spent fuel pool. (SRXB)
  - Evaluating generic decay times associated with spent fuel pool configurations. (RES/SRXB)
  
- 3) Evaluate fuel failure progression.
  - Evaluate the potential for criticality from accidents or personnel actions in response to an accident. (SRXB)
  
- 4) Assess the likelihood and consequences of zircaloy fires.
  - Perform a dose assessment for time-dependent offsite consequences. (RES)
  - Evaluate existing accident dose assessments to determine if they represent current operating and storage practices and if they are applicable to decommissioned plants. (HOHB)
  - Evaluate transport mechanisms. (RES)
  - Evaluate the phenomena of a zircaloy fire and potential mitigating controls. (SPLB)

- 5) Compare probability of SFP scenarios for decommissioned plants to operating reactor probability. (SPSB)
- 6) Explore design considerations and controls of the Wet-Basin Independent Spent Fuel Storage Installation (ISFSIs). (SPLB)
- 7) Interact with industry and the public to understand their concerns and utilize industry efforts, if possible, in the resolution of concerns. (SPLB/PD4D)
- 8) Consolidate Action Items 1-7 into a risk informed, technical basis for reviewing exemption requests and supporting rulemaking related to EP, safeguards, insurance indemnification, and other issues for decommissioned plants. (SPLB)
- 9) Identify any follow up research or other activities which need to be performed to address any large uncertainties in the available information and further technical support needed. (ALL)