4/5/99 Version

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. Further technical work is needed on spent fuel pool accidents due to uncertainties in the current generic analyses and the potential for significant consequences.

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) An interim 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:

1) Maintain safety
2) Reduce unnecessary regulatory burden
3) Increase public confidence
4) Improve efficiency and effectiveness

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 appropriate areas while optimizing expenditures of licensee and staff resources.

5/11

Working Group 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

- How will this be integrated?

Decommissioning Technical Working Group:

Team Leader and Technical Support: Vonna Ordaz, SPLB

SFP accidents and systems:	Diane Jackson, SPLB Chris Gratton, SPLB
Decomm. Projects contact:	Richard Dudley, PD4D
Probability:	Glenn Kelly, SPSB Ed Throm, SPSB
Thermal Hydraulics&Codes:	Joe Staudenmeier, SRXB Chris Boyd, RES assistance
Dose Assessment:	Jason Schaperow, RES John Ridgely?, RES Jim O'Brien, HOHB
Structural	Goutam Bagchi, DE
Fire Protection	Ed Connell, SPLB Tanya Eaton, SPLB
Criticality	Larry Kopp, SRXB
Maintenance Rule and QA	Wayne Scott, HQMB

Working Group Plan:

1) Re-evaluate the probabilities of SFP scenarios.

   - Determine potential initiating events and accident scenarios that could lead to spent fuel uncovery. (SPSB)
   - Determine the site limiting scenarios to analyze based on their probabilities. (SPSB)
   - Evaluate the use of a seismic margins assessment to analyze the structural integrity of the SFP structure. (DE)
   - Evaluate the effects of mitigative actions on the probabilities of the scenarios (i.e., instruments, procedures, staffing). (SPSB)
   - Consider the effects of Maintenance Rule and Quality Assurance Programs. (HQMB)
   - Evaluate the recovery probability of the spent fuel. (SPSB)

2) Re-evaluate the spent fuel heat-up analysis.

   - Evaluate whether 565 degrees C is an acceptable criterion for when the onset of gap release occurs. (SRXB)
   - Determine what the appropriate temperature is that we are analyzing to. (SRXB)
   - 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)
   - Evaluate 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 consequences (zircaloy fire) of the most limiting scenarios.

   - Evaluate transport mechanism. (RES)
   - Evaluate the phenomena of a zircaloy fire and potential mitigating controls. (SPLB)

- 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)

Talk to Rich BT Gary

5) Compare risk in SFP scenarios to the NRC ~~outcome~~ safety goals. (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)