

D.A. Dube
May 15, 2007

Industry/NRC Working Group

Purpose: *To assess whether and how licensee PRA models that are updated to meet RG 1.200 can be factored in to the SDP*

Criteria for Evaluation of Options

- A. Impact on licensee resources
- B. Improved timeliness
- C. Impact on NRC staff efficiency
- D. Impact on licensee efficiency
- E. Impact on NRC resources (e.g., training, model infrastructure)
- F. Ability to extend to external events and low power/shutdown PRA modeling
- G. Impact on ability of NRC staff to perform independent confirmation
- H. Incentive to industry to adopt RG 1.200 promptly
- I. Improved completeness and fidelity of models
- J. Scrutability of models and results
- K. Degree of implementation by industry

**Option 1
Status Quo**

- continue to improve SPAR models
- for specific findings, both the licensee and NRC make adjustments to their models
- there is usually good agreement between licensee and NRC staff results
- by *de facto*, the staff relies on licensee PRA models to some extent
- as licensees comply with RG 1.200, the NRC staff has more confidence in the results
- for external events, the staff uses input from licensee external events PRA and/or bounding analyses

CON (criteria strongly against the option)
F, H

PRO (criteria strongly favoring the option)
G

Note: all other criteria not indicated above do not strongly work in favor or against the option

**Option 2
PRA Model meets RG 1.200**

- licensee uses their PRA model and makes the determination of the significance

CON (criteria against the option)
E, G, J

PRO (criteria favoring the option)
A, B, C, D, F, H, I, K

Note: for Options 2 through 4, the evaluation is with respect to the Status Quo (Option 1)

Option 3
PRA model meets RG 1.200 and
the model and all supporting documentation
is provided to NRC staff to run

- assumes there is a “translator” for basic event and other modeling information

CON (criteria against the option)

A, E, G, K

PRO (criteria favoring the option)

B, D, F, H, I, J

To be determined (not evident if a PRO or CON at this time)

C

Option 4
Fully update the SPAR models to
reflect licensees’ RG 1.200 conforming model

- SPAR models all use same methods and general modeling assumptions (e.g., HRA, though PSFs may differ, as would vendor-specific RCP seal failure model)
- specify standard level of detail in the models
- restrict credit for use of non-standard systems for which full training (including hands-on walk-through) is not in use
- use plant-specific data, though the data analysis would be prescriptive

CON (criteria against the option)

A, E, F, H, K

PRO (criteria favoring the option)

B, D, I, J

TBD

C

Note: all criteria not shown above appear to be neutral in impact compared to Option 1 (status quo)

Option 5
[applicable to replacing phase 2 screening worksheets]
NRC staff uses licensees' configuration risk management (CRM) model

- capable of being used by the resident inspector
- capable of being used by a visiting inspector
- the results provide risk insights not just a risk number
- CRM meets regulatory requirements

CON (criteria against the option)
A, E, G

PRO (criteria favoring the option)
B, C, F, H, I, K

Note: all criteria not shown above appear to be neutral in impact compared to the status quo for phase 2 screening per Option 6

Option 6
[applicable to replacing phase 2 screening worksheets]
NRC staff uses SPAR model with SAPHIRE 8

- this option is the status quo for phase 2 screening in that the staff appears to be headed in this direction, and is therefore neutral in impact

Option 7
Replace Licensee PRA models by Super-SPAR

- NRC resources to upgrade 70+ models to the level of detail in all licensee PRA models, including external events, is in the many tens of millions of dollars
- it is doubtful that industry would discard their PRA models
- dismissed as impractical