RIC 2004
A Phased Approach to Improving PRA Quality

Session T-3: Risk Informed Activities

PRA Quality and Risk Communication:
A Point of View

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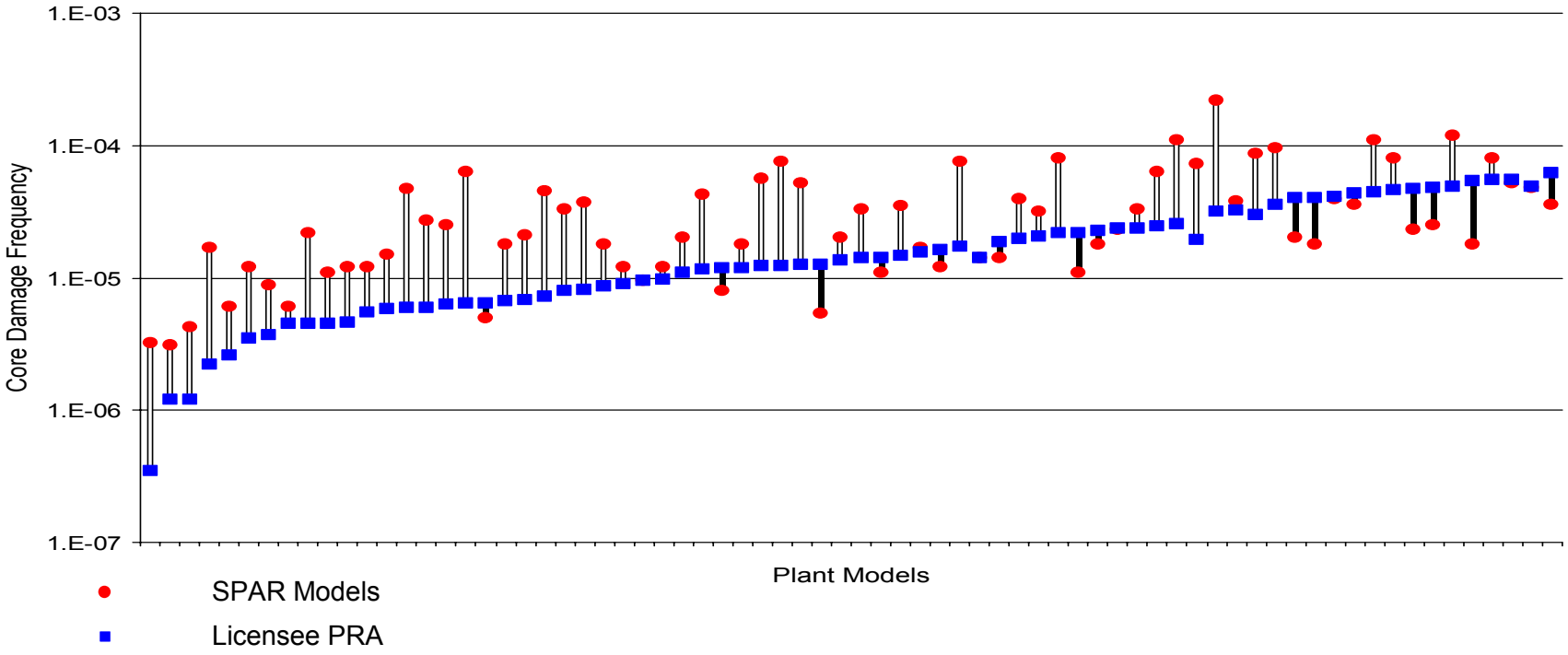
PRA Quality and Risk Communication: A Point of View

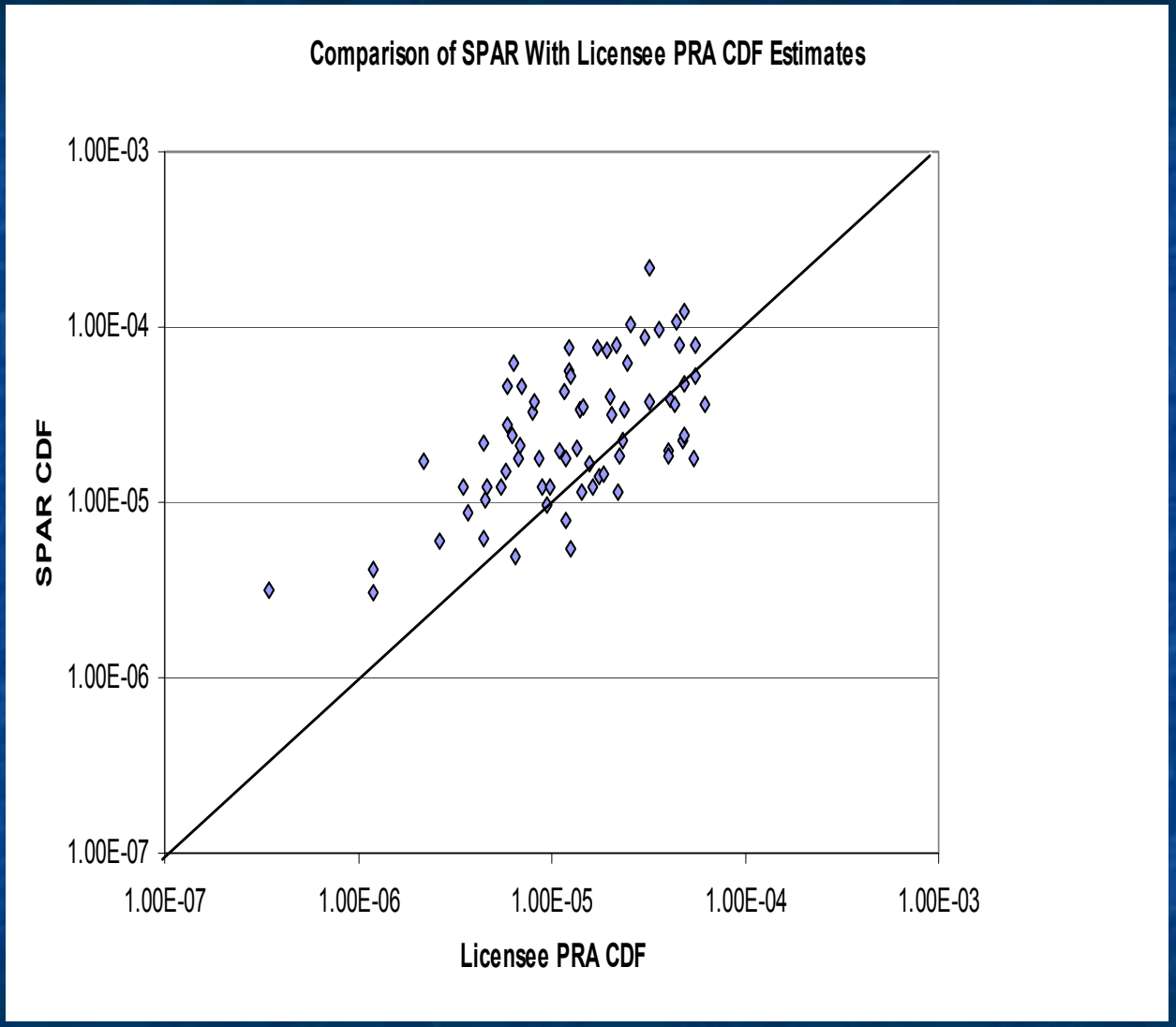
Introduction

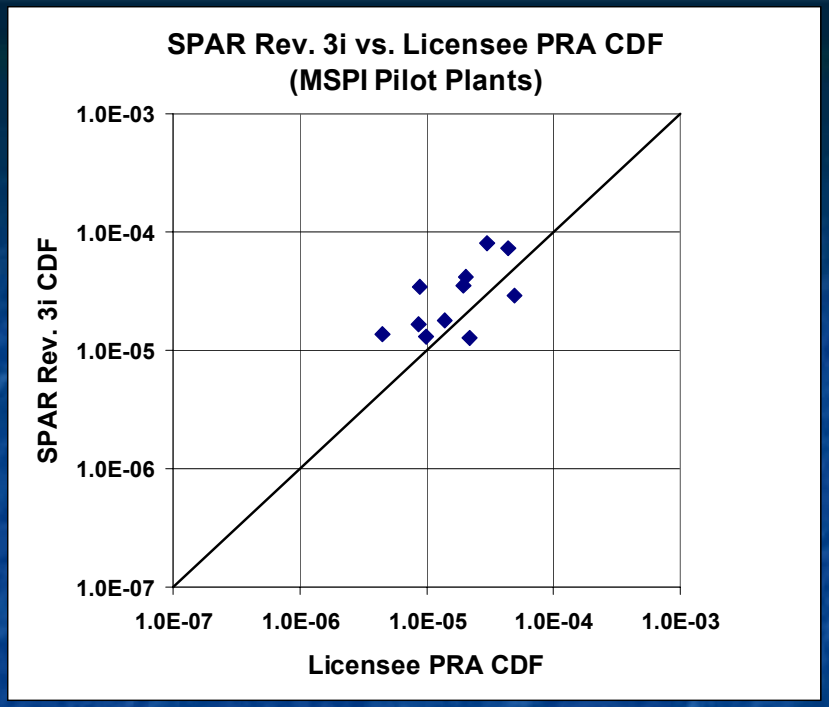
- SPAR and licensee PRA results comparability.
- Major factors that influence differences in risk results*.
- A corollary approach to quality.
- Risk Communication Benefit: Increase Public Confidence.

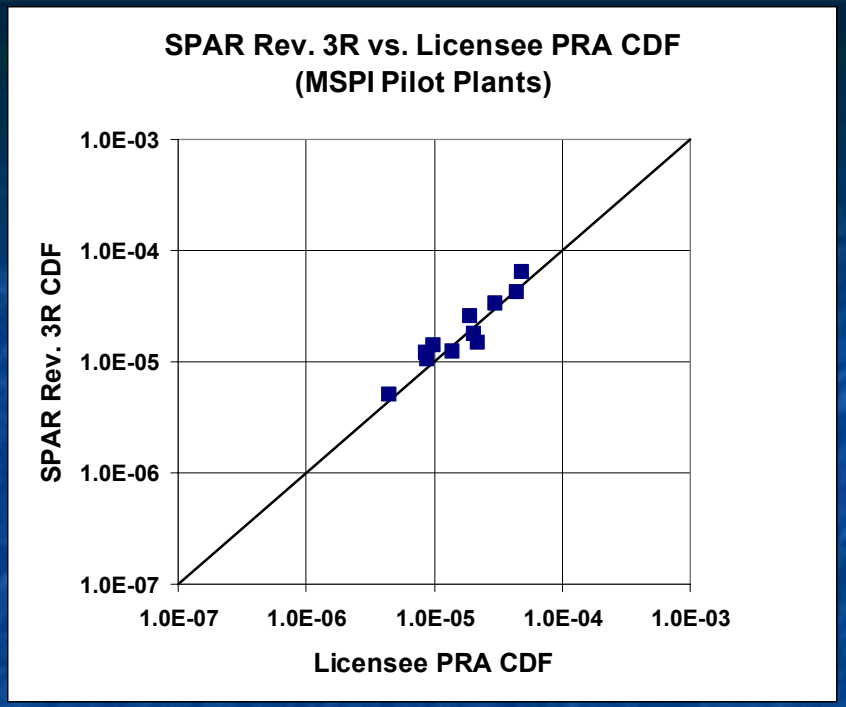
* Applies to Level 1 at-power PRAs

Comparison of SPAR with Licensee PRA CDF Estimates




Comparison of SPAR With Licensee PRA CDF Estimates
SPAR CDF
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-07
1.00E-06
1.00E-05
1.00E-04
1.00E-03
Licensee PRA CDF


SPAR Rev. 3i vs. Licensee PRA CDF
(MSPI Pilot Plants)
SPAR Rev. 3i CDF
1.0E-03
1.0E-04
1.0E-05
1.0E-06
1.0E-07
1.0E-07
1.0E-06
1.0E-05
1.0E-04
1.0E-03
Licensee PRA CDF


SPAR Rev. 3R vs. Licensee PRA CDF
(MSPI Pilot Plants)
SPAR Rev. 3R CDF
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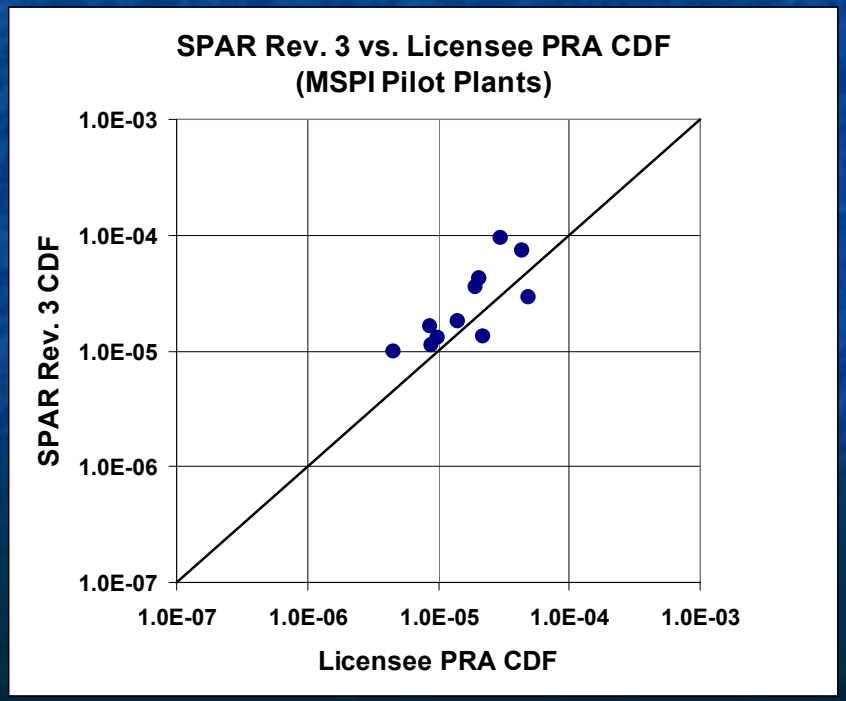
1.0E-04
1.0E-05
1.0E-06
1.0E-07
1.0E-07
1.0E-06
1.0E-05
1.0E-04
1.0E-03
Licensee PRA CDF


SPAR Rev. 3 vs. Licensee PRA CDF
(MSPI Pilot Plants)
SPAR Rev. 3 CDF
1.0E-03
1.0E-04
1.0E-05
1.0E-06
1.0E-07
1.0E-07
1.0E-06
1.0E-05
1.0E-04
1.0E-03
Licensee PRA CDF

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Major Factors that Influence Difference in Risk Results*

Impact on CDF

- Support system initiator modeling/frequency.
- RCP seal failure model/probability.
- BWR depressurization success criteria.
- Post-containment failure injection capability for BWRs.
- PWR PORV success criteria.
- LOOP/SBO modeling.
- Steam generator tube rupture modeling.
- Equipment reliability, human error probability, and CCF parameter estimation.
- Other plant specific modeling details:
  - BWR injection sources.
  - Low importance initiators.
    - •
    - •
    - •

* Applies to Level 1 at-power PRAs, Issues Identified during SPAR Onsite QA/Benchmark Review

PRA Quality and Risk Communication: A Point of View

A corollary approach to quality

- Develop detailed guidance for models and parameter estimates for the factors that can result in Large and Medium variations in risk (CDF).
- Implement "detailed guidance" consistent with high level and supporting requirements of the ASME Standard.
- "Small" issues can be addressed thru ASME standard alone.
- Manage exceptions, emerging issues.
- Define role of SPAR to provide check of overall CDF and dominant contributors.
- Develop systematic approach for identifying qualitative and quantitative uncertainties and making regulatory decisions in light of such information.

PRA Quality and Risk Communication: A Point of View

Risk Communication Benefit: Increase Public Confidence

- More robustness/less variability in risk results adds to public confidence.
- Understanding uncertainty and applying sound decision logic should produce more consistent regulatory decisions; adds to public confidence.
- Keep total CDF and QHO in the risk perspective: gives a truer risk perspective to the public.
- Should NRC risk studies and PRAs meet quality standards?