

# **RIC 2004**

## **A Phased Approach to Improving PRA Quality**

### **Session T-3: Risk Informed Activities**

#### **PRA Quality and Risk Communication:**

##### **A Point of View**

**Patrick W. Baranowsky**

**Chief, Operating Experience Risk Analysis Branch**

**U.S. Nuclear Regulatory Commission**

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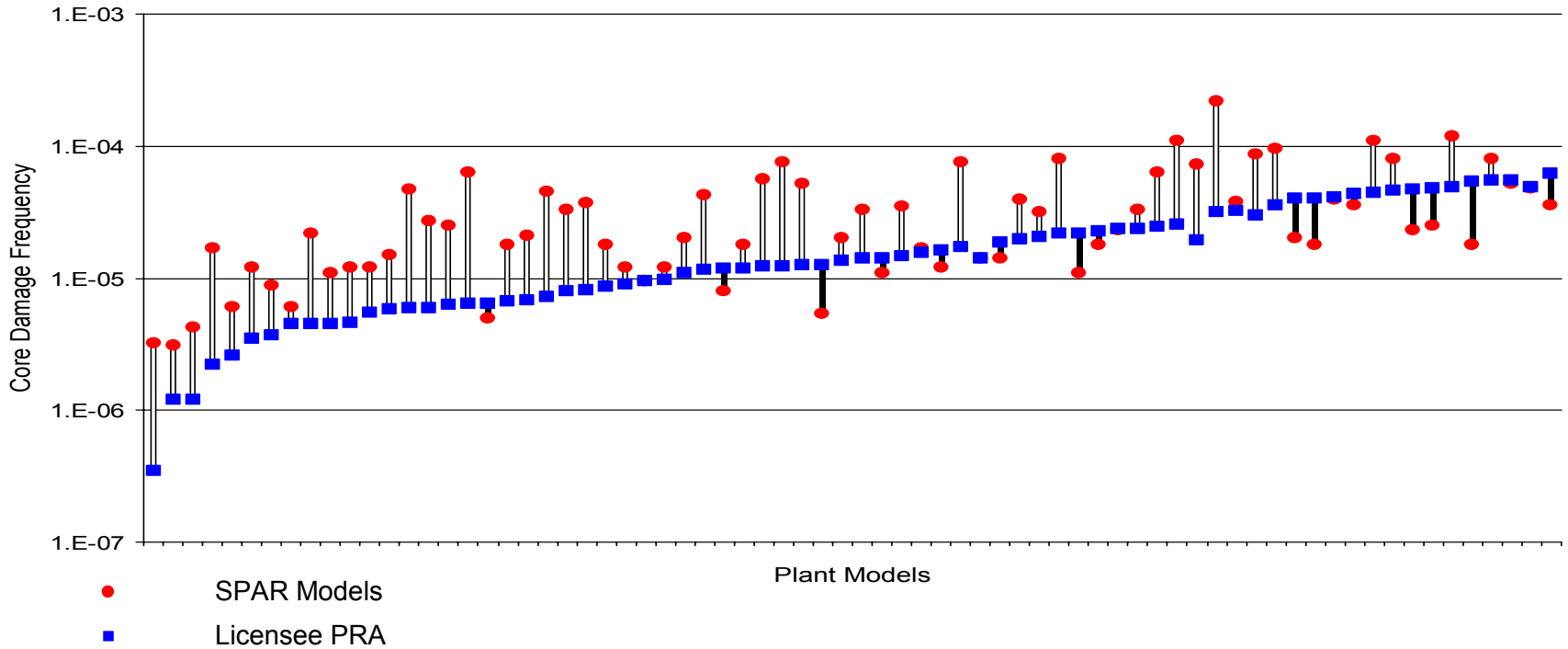
# PRA Quality and Risk Communication: A Point of View

## Introduction

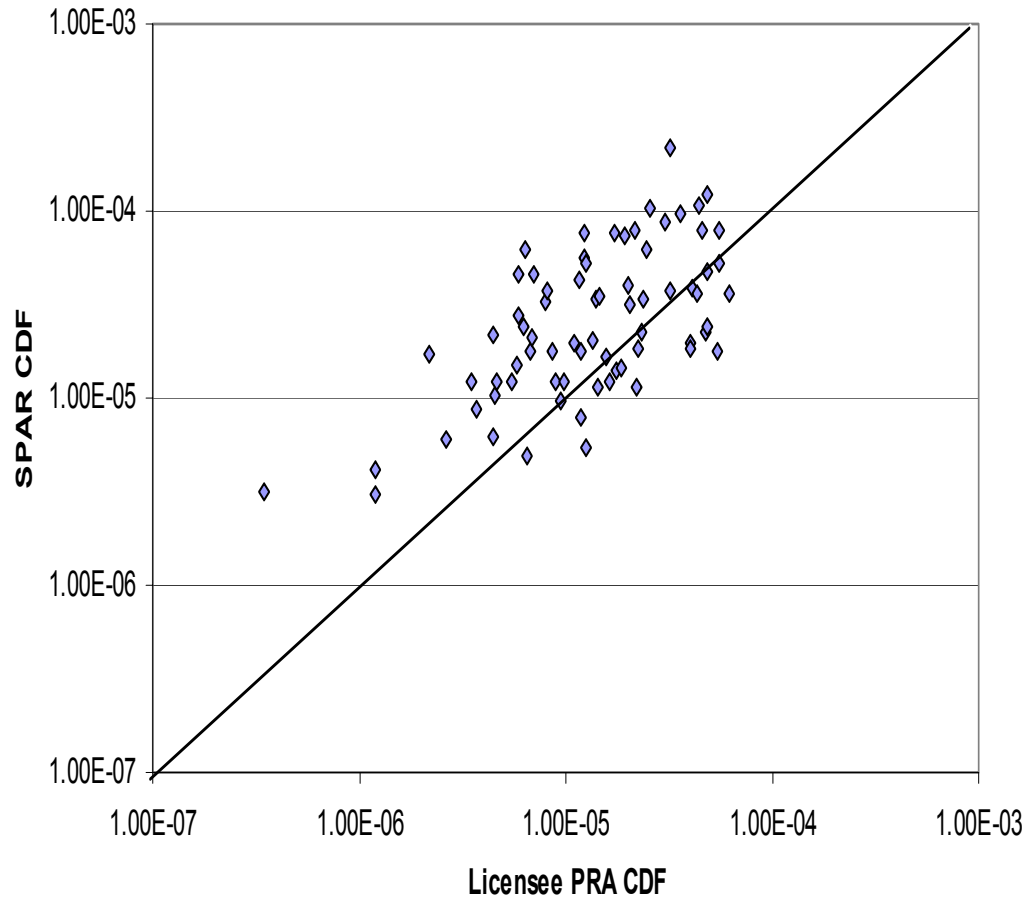
- SPAR and licensee PRA results comparability.
- Major factors that influence differences in risk results\*.
- A corollary approach to quality.
- Risk Communication Benefit: Increase Public Confidence.

\* Applies to Level 1 at-power PRAs

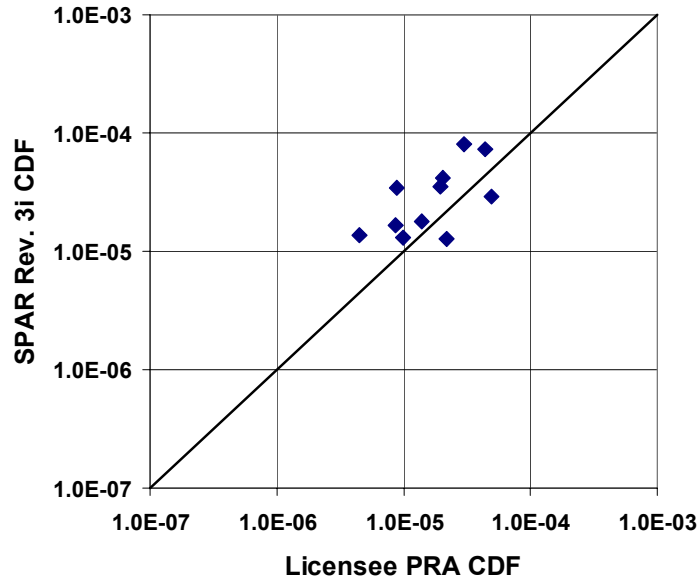
# Comparison of SPAR with Licensee PRA CDF Estimates



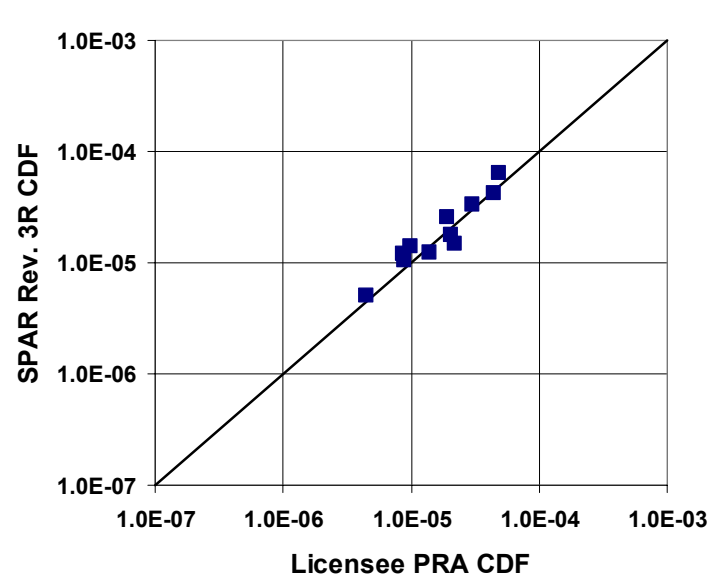
Comparison of SPAR With Licensee PRA CDF Estimates



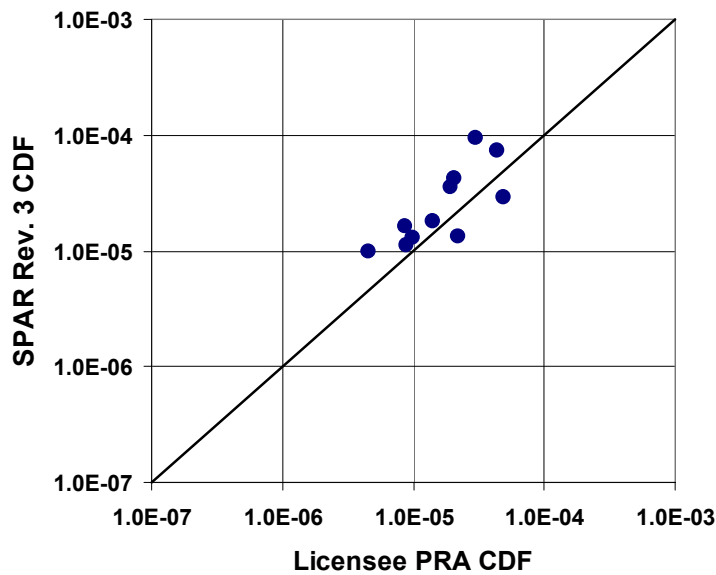
**SPAR Rev. 3i vs. Licensee PRA CDF  
(MSPI Pilot Plants)**



**SPAR Rev. 3R vs. Licensee PRA CDF  
(MSPI Pilot Plants)**



**SPAR Rev. 3 vs. Licensee PRA CDF  
(MSPI Pilot Plants)**

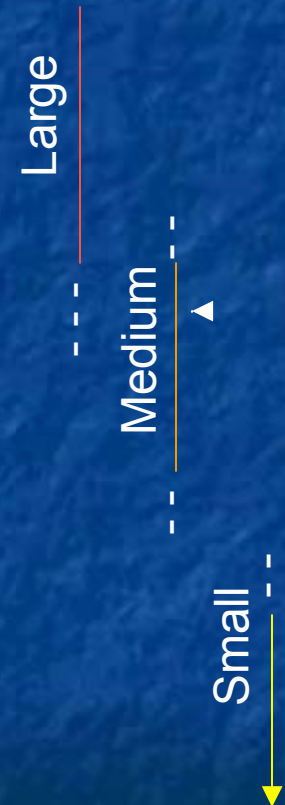


# PRA Quality and Risk Communication: A Point of View

## Major Factors that Influence Difference in Risk Results\*

- 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.
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## Impact on CDF



\* 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?