BWROG ECCS Suction Strainers Risk-Informed Solutions – NRC Public Meeting

Results Addendum

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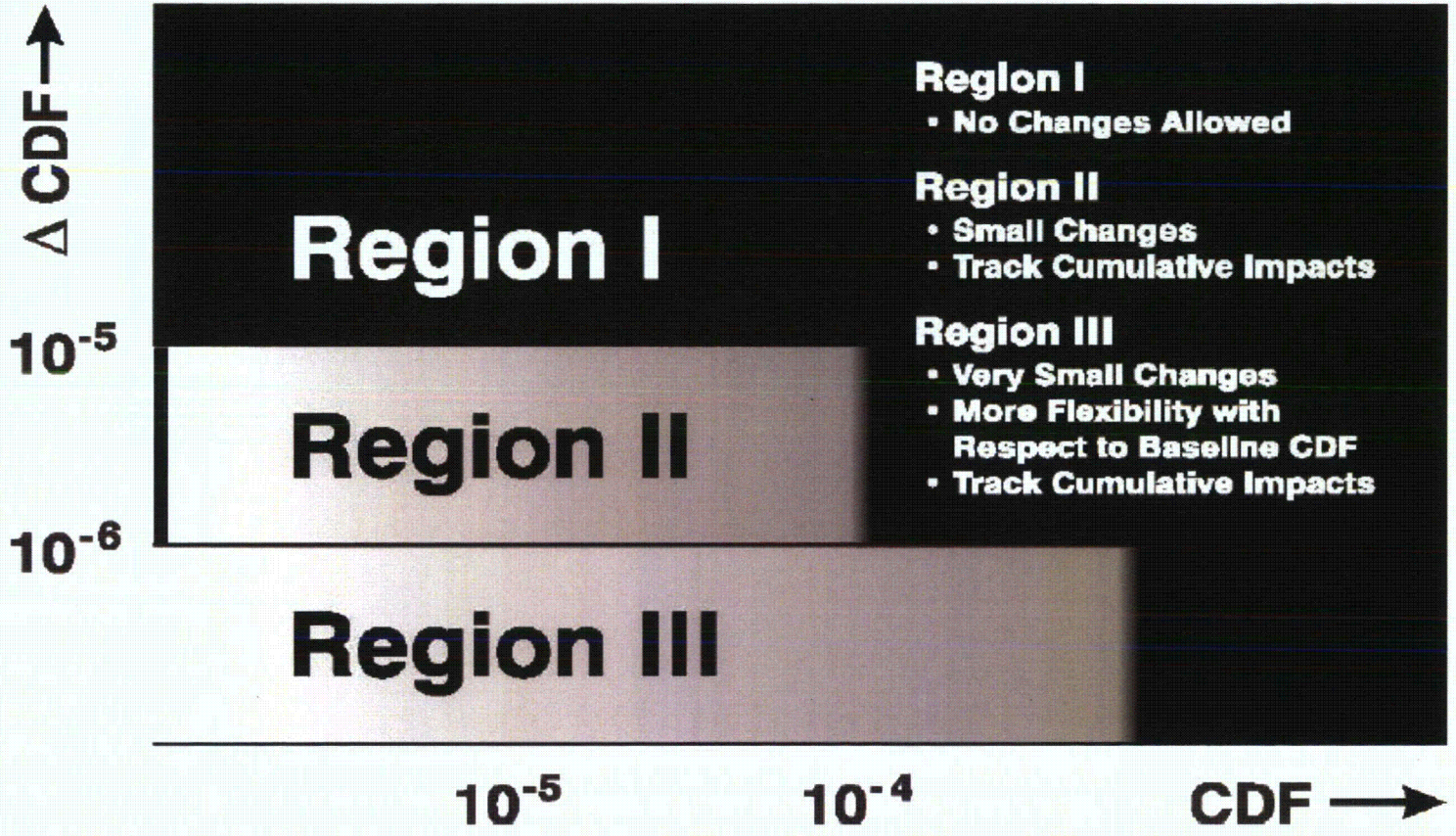
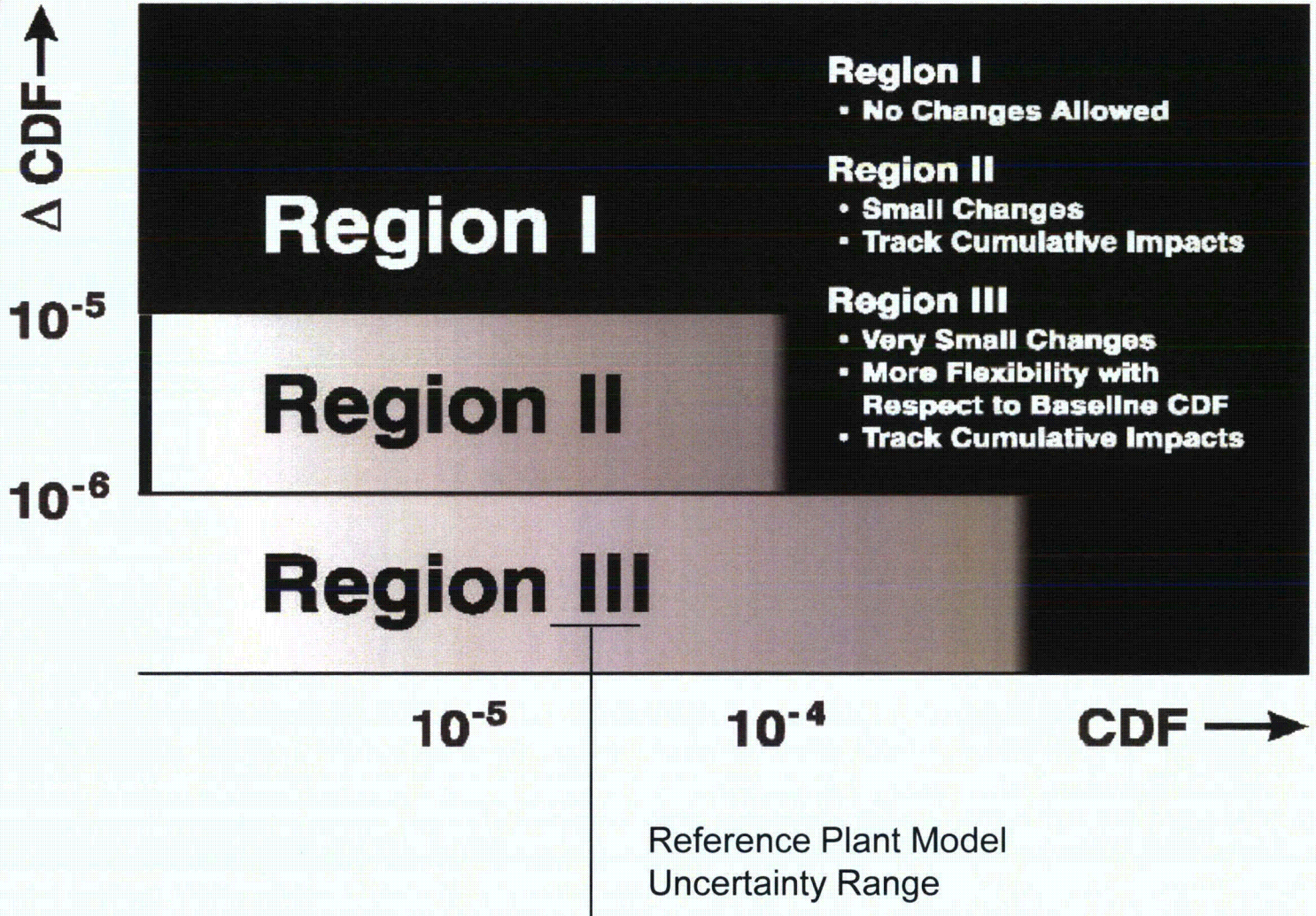
BWR Expertise – Proven Solutions

Acceptance Guidelines for Core Damage Frequency



▲ Reference Plant Calculation (without compensatory measures)

Acceptance Guidelines for Core Damage Frequency Compared with Uncertainty



Sensitivities for 2014 Proof of Principle

Case #	Condition	Bed Density	Coatings	ΔCDF (Per Rx Yr)
1	Baseline (w/o defense-in-depth mitigation measures)	65 lb/ft^3	3.4 L/D topcoated ZOI 7.4 L/D untopcoated ZOI Break Dependent ZOI (Spherical ZOI)	8.7E-9
2	Fixed Coating	65 lb/ft^3	Fixed Qualified Coatings Addition	2.5E-9
3	Lower Density	55 lb/ft^3	3.4 L/D topcoated ZOI 7.4 L/D untopcoated ZOI Break Dependent ZOI (Spherical ZOI)	8.7E-10
4	Combined Cases 2 & 3	55 lb/ft^3	Fixed Qualified Coatings Addition	<1.0E-10
5	Baseline including selected defense-in-depth measures(1)	65 lb/ft^3	10 L/D auto ZOI	<1.0E-9
6	Baseline (w/o defense-in-depth mitigation measures) Larger ZOI	65 lb/ft^3	4.0 L/D topcoated ZOI 10 L/D untopcoated ZOI Break Dependent ZOI (Spherical ZOI)	1.2E-8

(1) Defense-in-Depth measures included:

- Strainer backflush
- Alternate injection from external water source

Conclusion

- Demonstration of process and ability to display risk significance of ECCS suction strainer issues compared with established acceptance guidelines
- Deterministic inputs placed in a probabilistic framework provide a structure within which to discuss significance of issues
- Sensitivities and plant specific evaluations provide additional perspective on the safety significance of these issues across the fleet
- Phase 1 results are encouraging for the use of a risk-informed approach as input to decision makers in resolving phenomenological effects on strainer performance