


Syracuse
June 2004

“RETS – REMP WORKSHOP 2004”

**Nuclear Liability Insurance Performance Indicators
for
Nuclear Power Plant Effluent Releases**


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Overview

- ❖ Background on Nuclear Liability Insurance Risk
- ❖ Introduce ANI Performance Indicator Areas
- ❖ Performance Trends


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Nuclear Liability Insurance Risk

- ❖ \$300 US Million Provided to Each US NPP Site
- ❖ Protection Covers Operators & Suppliers Against Bodily Injury or Property Damage Caused by Nuclear Hazard
- ❖ Losses Can Be Catastrophic or Non-Catastrophic
- ❖ Claims Defense Costs Can Be Major Portion of Claim


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Nuclear Liability Insurance Risk

- ❖ Increased Public Awareness of NPP Effluent Releases & Perception of Personal Risk
- ❖ Do not differentiate between Isotopes of Cobalt-60 and Tritium
- ❖ 1 atom Co-60 ~ 1 atom of Tritium (perception)
- ❖ NPP Releases Cause Harm !
- ❖ Majority of Claims from Offsite BI & PD

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Nuclear Liability Insurance Risk

- ❖ Can Mitigate Excessive Claims Defense Costs Through Evidence of Due Care and Proper Operation
 - ANI's Performance Indicator Areas Can Be Used To Demonstrate Such Care
 - ANI Engineering Rating Factor Program

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Power Reactor Liability Rating - 5 Components

- ✓ Reactor Type
 - ✓ Reactor Use
 - ✓ Reactor Size
 - ✓ Reactor Location
 - ✓ Type of Containment

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Nuclear Liability Insurance Premium

❖ **Ave Nuclear Liability Premium**
~ \$725,000 (Single Operating Unit)

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ANI Engineering Rating Factor (ERF)

- ❖ Implemented 1981
- ❖ Collaborative Effort
- ❖ Comparative Rating Basis
- ❖ Reflect Varying Performance of Individual Insureds and Thus the Insurance Risk to ANI Arising out of that Performance
- ❖ Redistribute Total Nuclear Liability Insurance Premium Based on Individual Plant Performance (Premium Neutral)

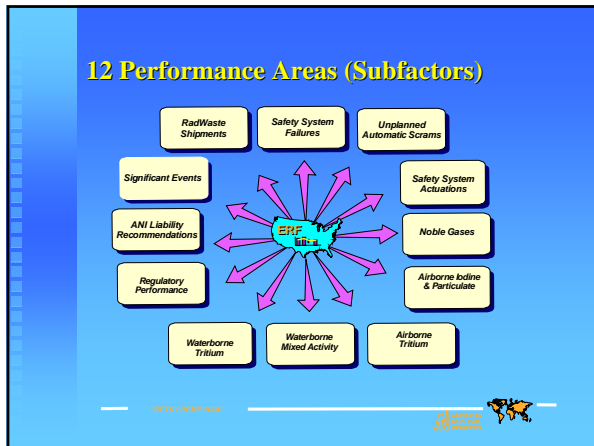
20% Credit	Best Performers
30% Surcharge	Higher Risk Performers

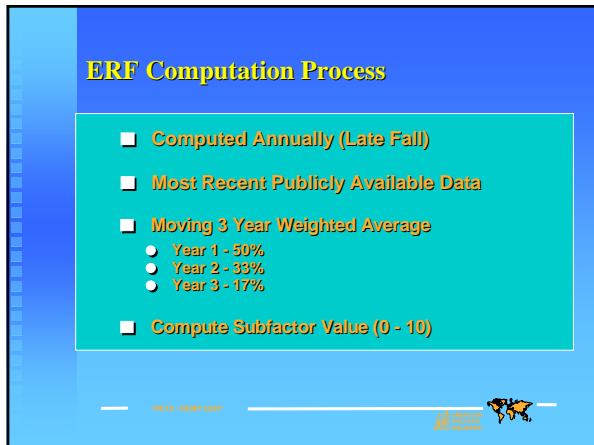
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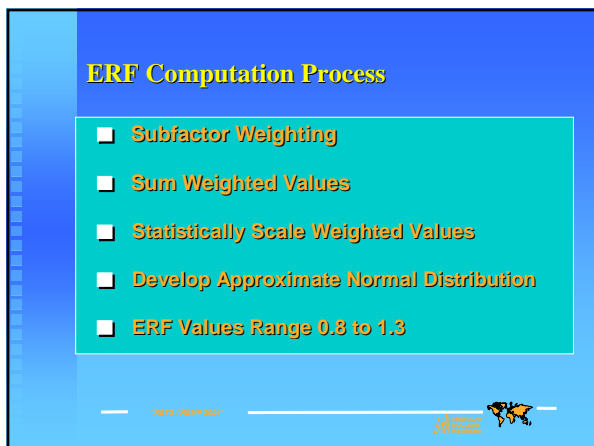
Power Reactor Liability Rating - 6 Components

- Reactor Type
- Reactor Use
 - Reactor Size
 - Reactor Location
 - Type of Containment
 - ERF (Introduced 1981)

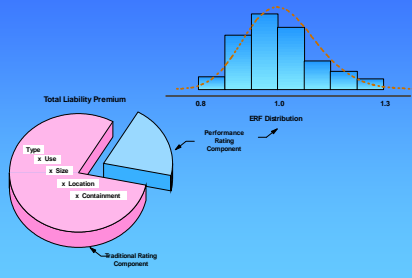
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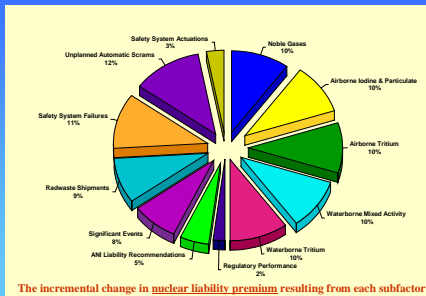
Typical ERF Distribution



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Subfactor Percent Contribution



The incremental change in nuclear liability premium resulting from each subfactor

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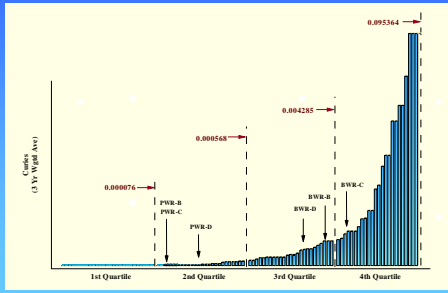
Performance Comparison

- Independent of ERF Effect on Liability Premium
- Inherent Differences Between Plant Designs and Types Factored In
- Performance Profiles Developed
 - 12 Performance Areas
 - 11 Comparative Categories

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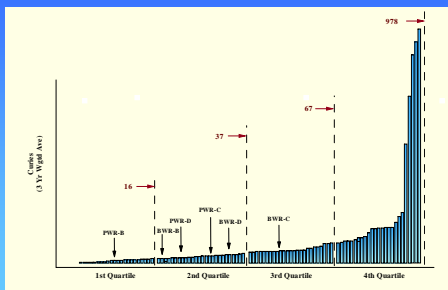
Airborne Iodine & Particulate (2004)



78273 / 78287 / 2007



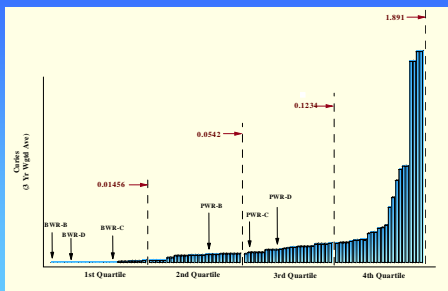
Airborne Tritium (2004)



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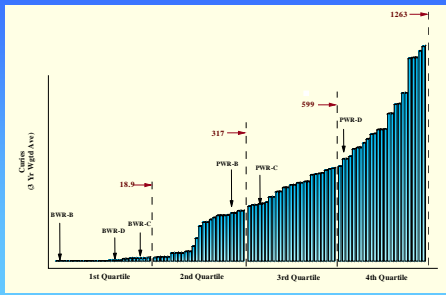
Waterborne Mixed Activity (2004)



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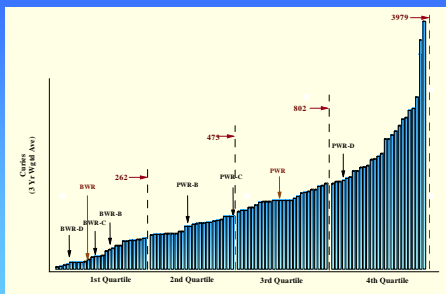
Waterborne Tritium (2004)



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Aggregate Releases (2004)



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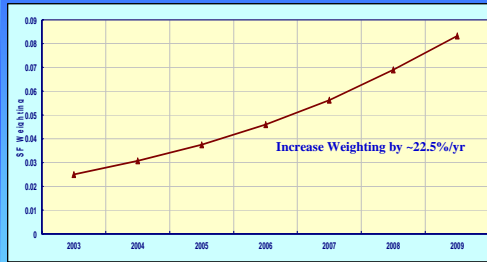
SF Weighting Changes

- Increased insurance exposure due to effluent releases
 - Public Drinking Water / Other Off-Site Areas
- '02 Separated Out Effluent Release Points
- For '02 & '03 No Change in Weighting
- For '04 Increased Weighting by 22.5%
 - Each Effluent Component Contributed ~3.06% to the total 12 Subfactor Compliment
- Will Increase Weighting by ~22.5% / yr Until All 12 Subfactors Weighted Equally (~8.3% each)

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Proposed Weighting – Effluent Releases



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ERF Value Comparison (2004)

BWR's				PWR's			
Class	MWh	No. Units	Ave ERF	Class	MWh	No. Units	Ave ERF
• BWR's	All	34	1.08	• PWR's	All	69	0.96
• BWR-B	1500-2500	7	1.02	• PWR-B	1500-2500	10	0.94
• BWR-C	2500-3000	9	1.06	• PWR-C	2500-3000	23	0.95
• BWR-D	>3000	18	1.1	• PWR-D	>3000	36	0.98
• All Plants		103	1.00				

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Concluding Remarks

- ❖ ANI ERF Reflects Composite Effect of Individual Plant Performance
 - ❖ Assists Underwriting Judgment of Nuclear Liability Insurance Risk
 - ❖ Redistribute Premium Based on Plant Performance
 - ❖ Performance Trends Identify Potential Liability Risk
 - ❖ Provides Communication Platform

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