Nuclear Liability Insurance Impact

Due To

Nuclear Power Plant Effluent Releases

William Wendland, P.E.

American Nuclear Insurers
Glastonbury, Connecticut USA
Overview

- Snapshot – The effect that effluent releases have on nuclear liability insurance at NPPs
Risk

- Term is all inclusive, many components
  - Biological
  - Radiological
  - Financial
  - Corporate Liability
  - Others
ANI Insured Nuclear Facilities (Domestic)

- In US
  - ~ 1100 Policies, 400 Locations
  - $300m at each US NPP
  - On-site Bodily Injury & Off-site Bodily Injury Property Damage Caused by the Nuclear Energy Hazard
ANI Insured Nuclear Facilities

- Outside US
  - Provide Reinsurance Capacity on a Facultative Basis.
  - Insure ~2/3 of the over 400 NPPs in 31 Countries.
  - Write up to $50 million of direct liability coverage for US suppliers of products or services sold to nuclear facilities outside of US.
Nuclear Liability Insurance Risk

- $300 Million US 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
Nuclear Liability Insurance Risk (Effluent Releases)

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

- Direct Financial Impact (ERF)
- Indirect Financial Impact (ICRP)
Nuclear Liability Insurance Risk

- Facilities 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 (ERF)
Average Nuclear Liability Insurance
Premium

❖ ~ $725,000

(For Single Operating Unit)
Power Reactor Liability Rating - 6 Components

- Reactor Type
- Reactor Use
- Reactor Size
- Reactor Location
- Type of Containment
- ERF (Introduced 1981)
ANI Engineering Rating Factor (ERF)

- Implemented 1981
- Collaborative Effort
- Comparative Rating Basis
- Reflect Varying Performance of Individual Insureds and Thus the Insurance Risk to the Pools Arising out of that Performance
- Redistribute Total Nuclear Liability Insurance Premium Based on Individual Plant Performance (Premium Neutral)
  - 20% Credit
  - 30% Surcharge
- Best Performers
- Higher Risk Performers
8 Performance Areas (12 Subfactors)

- RadWaste Shipments
- Safety System Failures
- Unplanned Automatic Scrams
- Significant Events
- ANI Liability Recommendations
- Regulatory Performance
- Safety System Actuations
- Noble Gases
- Airborne Iodine & Particulate
- Waterborne Tritium
- Waterborne Mixed Activity
- Airborne Tritium
ERF Computation Process

- Subfactor Weighting *
- Sum Weighted Values
- Statistically Scale Weighted Values
- Develop Approximate Normal Distribution
- ERF Values Range 0.8 to 1.3
Increased insurance exposure due to effluent releases
  • Public Drinking Water / Other Off-site Areas
2002 Separated out Effluent Releases to Individual Subfactors
For ’04 initiated increased weighting by 22.5%
  • Each effluent component contributed ~3.7% to the ERF weighting
Will Increase Weighting each Year by ~22.5% Until All 12 Subfactors are Weighted Equally
Weighting Protocol – Effluent Releases

Increase Weighting by ~22.5%/yr
Direct Effect on Premium

- Performance Evaluated on Comparative Basis
- Direct Multiplier on Premium

ANI Recommendation Impact within ERF can be
~ $3,000 - $52,000 (Single Unit)
~ 1.5 x for Multi-unit Site

Relative Contribution of aggregate environmental component in ERF for plant with best industry performance -
~ $20,000 - $250,000
Indirect Effects on Premium

- Industry Credit Rating Plan (ICRP)
- ~75% of Premium Set Aside in Reserve Fund
- Held for 10 Years
- Refunds are Effected by Claims Payments (Decreased from 90+%)

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Effluent Release Strategy Cost Analysis

Release Pathway

- Plant quartile rankings at 0% (Best Quartile)
- Weighted at 8.3% as would be following full phase in 2005

* Approximate Site Dollar Savings

Site Total (Curies) - Specific Pathway (Airborne/Waterborne)

“RETS / REMP 2005”
Concluding Remarks

- Risk Minimization
- High Quality Decisions
- Balanced Effluent Release Program