

# IP2 SGTL Risk Analysis

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Region I  
US NRC

C/35

# Risk Evaluations Performed and Results

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- NRR PRAB Risk Analysis
  - Determined a delta-CDF  $\sim 1\text{E-}4$  and a delta LERF  $\sim 1\text{E-}4$  for SGT inspection findings
- ConEdison Risk Analysis
  - Determined a CCDP  $\sim 2.2\text{E-}6$  and CLERP  $\sim 0$  for the actual SGT event

# NRC Risk Assessment

## Assumptions

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- The 1997 SGT inspection performance deficiencies resulted in a IE frequency for SGT failures of 1/year
- The probability that the degraded tube would rupture rather than leak is 0.5
- Includes induced SGTRs - RCS overpressurization events (ATWS); Faulted SGs; and spontaneous failures

# ConEdison Risk Assessment Assumptions

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- Evaluated risk of actual event (Tube leak versus rupture)
- Assumed additional time available for operator actions & equipment recovery
- RWST inventory sufficient for long period of time and evacuation time sufficient that conditional LERF  $\sim 0$

# Comparison of Risk Assessments

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- Both risk assessments are technically accurate
- The risk associated with the 2/15/00 SGTTL was Low to Moderate (CCDP ~  $2E-6$ )
- The 1997 SGT inspection deficiencies were highly risk significant (delta-CDF ~  $1E-4$ )

# Application of Revised Reactor Oversight Program

- Delta-CDF not CCDF is used to determine finding risk significance
- IAW IMC 0609 delta-CDF ~ delta-LERF for SGTR issues
- IAW IMC 0609 delta-LERF > 1E-5 is a Red risk significance finding
- The NRC risk evaluation determined a delta-CDF/LERF of > 1E-5 (Red)

CDF SGTR ~ 1.3E-6  
TYPE II Release ~ 1.25E-6  
(SRV RELEASES)  
TYPE I Release ~ 3.73E-7  
(SRV fails to Recover)

IPE DATA: (Page 7-4) A SGTR where a safety valve fails to Close Results in a  
TYPE I Release (.2 Release Fraction of I, CS - worst category)  
If assumption that SGTR Freq ~ 1/12 The Type I Release Prob ~ 3.73E-7 / 1.3E-2  
= 2.84E-5 which would be RED

# Summary/Conclusion

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- The risk significance of the actual SGT event was low to moderate
- Poor SGT inspection in 1997 resulted in a highly risk significance condition
- Applying the guidance of IMC 0609 the risk associated with the SGT inspection findings are Red based on delta-LERF and Red/Yellow based on delta-CDF