

THE BWR PERSPECTIVE  
ON  
INTERIM HYDROGEN CONTROL MEASURES

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## GENERAL ELECTRIC'S OVERVIEW

PROPOSAL SHOULD NOT BE APPROVED SINCE . . .

- NO DEMONSTRATED NEED
- NO RECOGNITION OF BWR DESIGN FEATURES
- NO SIGNIFICANT INCREASE IN CONTAINMENT INTEGRITY
- COUNTERPRODUCTIVE TO SAFETY

## GENERAL ELECTRIC'S OVERVIEW

-CONTINUED-

THUS, WE REQUEST THAT COMMISSIONERS . . .

- REJECT STAFF PROPOSAL
  
- DIRECT FUTURE ASSESSMENTS BE BALANCED AND QUANTITATIVE
  
- REQUIRE USE OF RULEMAKING PROCESS

## ITEMS FOR DISCUSSION

- HYDROGEN PREVENTION AND MITIGATION
- INERTING RISK REDUCTION
- RISKS AND COSTS
- STAFF POSITION PAPER

## HYDROGEN PREVENTION AND MITIGATION

- METHODS OF HYDROGEN CONTROL
  - PREVENTION
  - MITIGATION
  
- LEVEL OF SAFETY ESTABLISHED BY
  - PREVENTION
  - MITIGATION

## HYDROGEN PREVENTION AND MITIGATION

-CONTINUED-

- UNIQUE BWR DESIGN FEATURES
  - REACTOR VESSEL WATER LEVEL MEASUREMENT
  - HIGHLY REDUNDANT WATER DELIVERY
    - 6 HIGH PRESSURE PUMPS
    - 7 LOW PRESSURE PUMPS
    - NEED ONLY 1 TO PREVENT CORE DAMAGE
  - RAPID DEPRESSURIZATION CAPABILITY
  - DIVERSE CORE COOLING CAPABILITY
  - ROUTINELY OPERATE WITH VOIDS
  - STRONG NATURAL CIRCULATION
  - HIGH POINT VENTING
  - LARGE PASSIVE HEAT SINK IN CONTAINMENT
  - STUCK-OPEN RELIEF VALVE ACCOMMODATION
  
- ADDITIONAL PREVENTIVE FEATURES IMPOSED AFTER TMI

## INERTING RISK REDUCTION

- EFFECTIVE FOR LIMITED RANGE ONLY
  
- MINIMAL IMPACT ON OVERALL RISK REDUCTION

## PLANT SAFETY AND COSTS

- PLANT PERSONNEL SAFETY HAZARDS
  - ONE DEATH IN FOREIGN PLANT
  - KNOWN INCREASED RISK TO PLANT PERSONNEL
  
- CONTAINMENT ACCESSIBILITY REDUCED
  - AVAILABILITY
  - INDICATOR
  - OPERABILITY
  
- COSTS (PER PLANT)
  - CAPITAL COST ~\$2,000,000
  - REPLACEMENT ENERGY COST \$200,000 - \$500,000 PER YEAR



STAFF POSITION PAPER

GE COMMENTS

STAFF POSITION PAPER IS NOT BALANCED

- INERTING RISKS
- CONTAINMENT ENTRY
- BWR PREVENTION CAPABILITY
- PWR EVALUATION BASIS
- ARBITRARY ACCEPTANCE LIMITS
- ONLY ONE RISK REDUCTION APPROACH CONSIDERED

## CONCLUSIONS

- HYDROGEN GENERATION IS EFFECTIVELY PREVENTED IN BWR
  
- NO SIGNIFICANT INCREASE IN CONTAINMENT INTEGRITY
  
- INERTING IS NOT RECOMMENDED
  - DECREASED PERSONNEL SAFETY
  - REDUCED OPERATIONAL SAFETY
  
- ESTABLISH ANY FURTHER REQUIREMENTS VIA DISCIPLINED PROCESS