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## **ECCS REQUIREMENTS**

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## INTRODUCTION

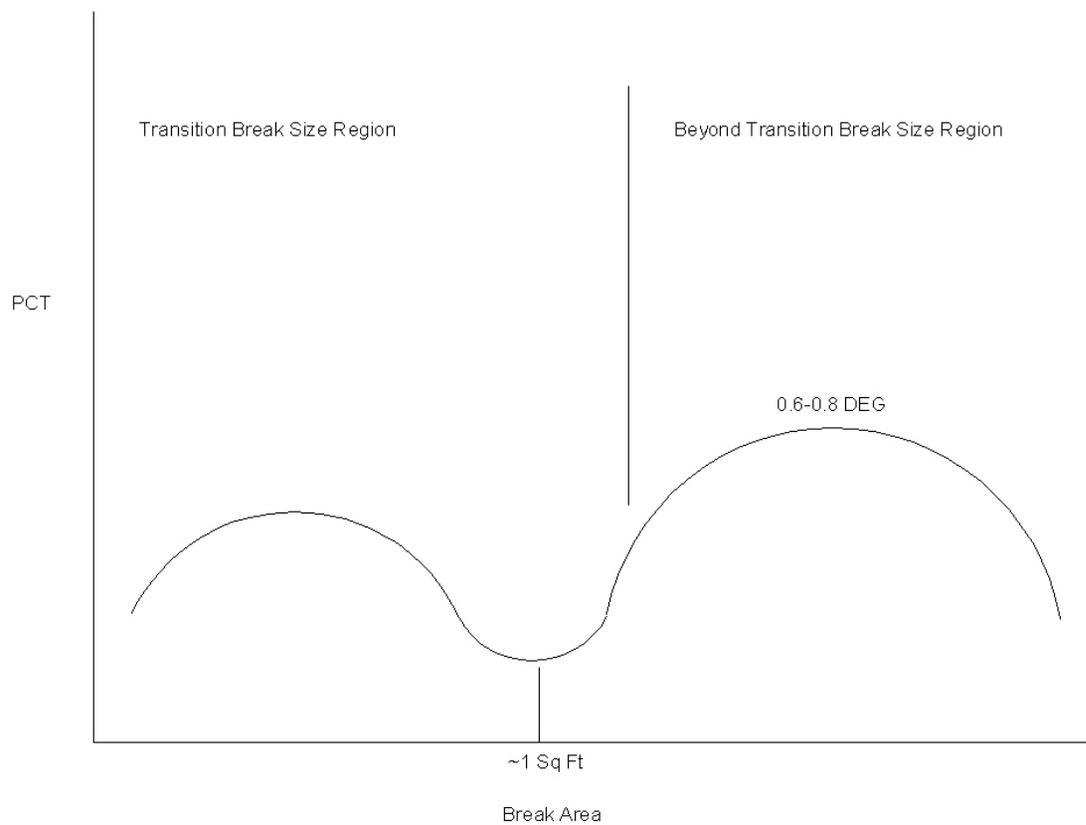
- **Evaluation Model**
- **Single Failure Criteria**
- **Acceptance Criteria**
- **Reporting Requirements**



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## TYPICAL PWR LOCA RESPONSE





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### TYPICAL BWR LOCA RESPONSE

- **Difficult to define a PCT versus break size spectrum**
  - **The Automatic Depressurization System equalizes all break sizes to depressurize the system to allow low pressure injection**
- **Impact of rule change on BWRs will be less dramatic than on PWRs**



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### EVALUATION MODELS

- **Realistic Model with assessment of uncertainty**
- **Appendix K Model**
  - ▶ **No assessment of uncertainty**
  - ▶ **Prescription of conservative features**
    - **1971 ANS decay heat curve \* 1.2**
    - **Baker-Just metal water reaction correlation**
    - **Disgard all injection flow from initiation of break until the end of bypass**



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### **EVALUATION MODELS IN PROPOSED RULE**

- **Up to and Including TBS Region**
  - **Current requirements maintained**
- **Beyond TBS Region**
  - **Model acceptable to the staff**



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## **SINGLE FAILURE CRITERIA**

- **Up to and Including TBS Region**
  - ▶ **Current requirements for worst single failure maintained**
  
- **Beyond TBS Region**
  - ▶ **Worst single failure not assumed**
  - ▶ **Credit for non-safety grade equipment considered**
  - ▶ **Risk-Informed metrics**
    - **$\Delta$ CDF,  $\Delta$ LERF, defense-in-depth**



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### ACCEPTANCE CRITERIA

- **Up to and Including TBS Region**
  - ▶ **PCT limit of 2200° F**
  - ▶ **MLO limit of 17%**
  - ▶ **Hydrogen generation equivalent to 1% clad reacted**
  - ▶ **Coolable Geometry**
  - ▶ **Long-term cooling**
  
- **Beyond TBS Region**
  - ▶ **Coolable Geometry**
  - ▶ **Long-term cooling**



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### REPORTING REQUIREMENTS

- **Up to and Including TBS Region**
  - **Retain current reporting requirement on PCT; sum of the absolute values of changes greater than or equal to 50°F**
  - **Add reporting requirement on MLO; sum of the absolute values of changes greater than or equal to 0.4%**
- **Beyond TBS Region**
  - **PCT requirement; sum of the absolute values of changes greater than or equal to 50°F**