

2/26/03 17

**SPENT FUEL DRY STORAGE TERRORIST  
EVENT ASSESSMENT PLAN**

**TRA ACTIONS REQUIRED FOR ISFSI ASSESSMENT**

- ⇒ IDENTIFY SCREENING CRITERIA OF CERTIFIED CASKS FOR VULNERABILITY ASSESSMENT
  
- ⇒ IDENTIFY ELEMENTS OF ANALYSES
  - ① DYNAMIC STRUCTURAL ANALYSES
  - ② DYNAMIC THERMAL ANALYSES
  - ③ SOURCE TERM DETERMINATION (PARTICLE SIZE DISTRIBUTION)
  - ④ CONSEQUENCE ANALYSES (PROMPT, LATENT, AND CLEANUP)
  
- ⇒ APPLY THREAT-X EVENTS ON CASKS

[ ] Ex 2

Portion Ex 2

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**CALCULATING SIZE DISTRIBUTION OF RADIONUCLIDES UNDER  
THREAT CONDITIONS (SEE CRITICAL PATH, ABOVE)**

- ⇒ **PERFORM CALCULATIONS (BOTH IN-HOUSE AND AT LABORATORIES)**
  
- ⇒ **EXAMPLE PROGRAM PLAN FOR LARGE PLANE CRASH**
  
- **STRUCTURAL MODELING:**
  - **PLANE CRASHING INTO RIGID BODY CASK**
  - **ENGINE CRASHING INTO DETAILED CASK**
  - **LANDING GEAR CRASHING INTO DETAILED CASK**
  - **FUEL TANK CRASHING INTO DETAILED CASK**
  
- **THERMAL MODELING**

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- FIREBALL AND POOL FIRE
- CANISTER FAILURE TEMPERATURE
- TIME TO ROD BURST
  
- ROD-TO-CASK SOURCE TERM
- FISSION PRODUCT TRANSPORT THROUGH CASK
- RADIOLOGICAL AND COST CONSEQUENCES

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### → EXAMPLE - AIRCRAFT CRASH

#### → MECHANICAL ANALYSES

- ↔ MODEL HYPOTHETICAL ISFSI
- ↔ DEVELOP ANALYTIC METHODOLOGY
- ↔ COORDINATE WITH RES (LESSONS LEARNED)
- ↔ DEVELOP DETAILED AIRCRAFT STRUCTURAL MODEL
- ↔ DEVELOP THERMAL MODELS
- ↔ DEVELOP RADIONUCLIDE SOURCE TERMS MODELS
- ↔ DEVELOP CONSEQUENCE MODELS
- ↔ PERFORM ANALYSES