



Department of Energy's *Activities & Challenges*

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DOE / HSS

Workshop on Risk Assessment
and Safety Decision Making Under Uncertainty

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DOE Activities Overview



- Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2009-1
- Risk Assessment Technical Experts Working Group
- Nuclear Safety Policy Update
- Risk Assessment Study (Internal and External)



DOE Activities Recommendation 2009-1



- Recommendation 2009-1, *Risk Assessment Methodologies at Defense Nuclear Facilities*
 - Historically used a "bounding" or deterministic approach to hazard and accident analysis
 - Increasing use of quantitative risk assessment (ad hoc)
 - Need for adequate policies and associated standards and guidance
 - 4 actions outlined in Recommendation
- DOE Implementation Plan
 - Addressed each action in recommendation (different order)



DOE Activities

Risk Assessment Technical Experts Working Group



- To support effective and appropriate utilization of risk assessment tools in nuclear safety applications.
- Composition
 - Steering Committee
 - Industry Experts
- Charter
 - Support Program and Field Office use of risk assessments
 - Support Training Development
 - Support Development of any New Policy/Standard/Guidance
- Web Page: <http://www.hss.doe.gov/nuclearsafety/ns/rawg/>



DOE Activities

Update of Nuclear Safety Policy



- Address Use of Quantitative Risk Assessments

Ensuring that quantitative and probabilistic risk assessments is only used to supplement qualitative hazard assessment and hazard control development processes when allowed by DOE directives and to the extent supported by industry practices and availability of risk data [current proposed draft]



DOE Activities Risk Assessment Study



- Collect Data on
 - Applications
 - Tools
 - Controls
 - Infrastructure
- External
 - FAA, NRC, NEI, NASA, CCPS, FDA
- Internal
 - Pantex, Y-12, LANL, Hanford, PNNL, INL, SRS



DOE Challenges



- Defining Nuclear Safety Application
- Defining Risk Assessment Terms
 - Qualitative
 - Probabilistic Risk Assessment
 - Semi-quantitative
 - Deterministic
- Use of Quantitative Risk Assessments to Preventative Controls versus Mitigative Controls
- Defining Design Basis Accidents



DOE Challenges



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DOE Challenges



- Ensure Appropriateness and Adequacy of Tools
- Ensure Adequacy of Data
- Developing Standards/Guidance for
 - Performance of QRA
 - Peer Review of QRA
- Establishing Appropriate Support Infrastructure



Contacts



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