

**U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**PRESENTATION TO
THE NUCLEAR WASTE TECHNICAL REVIEW BOARD**

**SUBJECT: A SUMMARY OF THE MINED GEOLOGIC
DISPOSAL SYSTEM PERFORMANCE
ASSESSMENT PROGRAM**

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SUMMARY OF PERFORMANCE ASSESSMENT STATUS

- o PERFORMANCE ASSESSMENT MODELS AND COMPUTER CODES AVAILABLE TO SUPPORT NEAR-TERM DECISIONS**
- o MODEL VERIFICATION IN PROGRESS**
- o MODEL VALIDATION METHODOLOGY DRAFTED**
- o MODEL DEVELOPMENT AND VALIDATION EXPERIMENTS IN PROGRESS**
- o SOFTWARE AND DATA QA BEING IMPLEMENTED**
- o INTEGRATION OF YMP PERFORMANCE ASSESSMENT CONTRACTORS FOR COMPLEX ANALYSES ACCOMPLISHED**

SUMMARY OF PERFORMANCE ASSESSMENT NEEDS AND PLANS

- **YMP TOTAL SYSTEM PERFORMANCE ASSESSMENTS WITH SENSITIVITY AND UNCERTAINTY ANALYSES WILL BE DONE THIS YEAR**
- **THE CREDIBILITY OF THE MODELING IS SEVERELY HAMPERED BY THE LACK OF SITE DATA**
- **CURRENT MODELS AND CODES ARE BEING SCREENED TO IDENTIFY WHICH TO CONTINUE TO SUPPORT, WHICH TO IMPROVE, AND WHAT NEW DEVELOPMENT IS NEEDED**
- **SEVERAL PERFORMANCE ASSESSMENT ISSUES NEED TO BE RESOLVED WITH RESPECT TO THE ADEQUACY OF THE CURRENT MODELS AND THE RELATIVE IMPORTANCE OF PHENOMENA AND PARAMETERS**

PERFORMANCE ASSESSMENT ISSUES

- **10 CFR PART 60 AND 40 CFR PART 191 NEED FURTHER INTERPRETATION FOR IMPLEMENTATION**
- **PERFORMANCE ASSESSMENT IS LIMITED MORE BY THE CREDIBILITY OF CONCEPTUAL MODELS THAN THE ABILITY FOR MATHEMATICAL MODELING**
- **SCENARIOS AND SCENARIO PROBABILITIES NEED FURTHER STUDY**
- **CURRENT SITE PARAMETER UNCERTAINTIES ARE LARGE**
- **CONSIDERABLE IMPROVEMENTS IN MODELS AND COMPUTER CODES ARE NEEDED FOR FINAL SITE SUITABILITY EVALUATIONS AND FOR LICENSING SUPPORT**