



U.S. Department of Energy
Office of Civilian Radioactive Waste Management



Significance of Unqualified Data and Software

Presented to:
DOE/NRC Quarterly Management Meeting

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Separate main - 70

Outline

- **Objectives and Approach for Data Qualification Impact Assessments**
- **Summary of Data Qualification Results and Impact Assessments**
- **Summary of Software Qualification Results and Impact Assessments**
- **Summary of Supplemental Science and Performance Analyses (SSPA) Data and Software Qualification Impact Assessment**

Objectives and Approach for Data Qualification Impact Assessments

- Qualify Data Tracking Numbers (DTNs) used in support of Analysis/Model Reports (AMRs) *1200 DTNs* supporting TSPA-SR Rev. 00, ICN 01
- For those DTNs not qualified as of 8/22/01 conduct impact assessments at 3 levels of use of information
 - Impact of input DTN on output from AMR
 - Impact of output from AMR on input to TSPA-SR
 - Impact of input to TSPA-SR on output from TSPA-SR
- Develop series of questions for each of above levels and have responsible individuals and managers evaluate impacts

*complete by 9/30
50 remaining as of 8/23*



Summary of Results of Data Qualification Impact Assessments

- **50 unique unqualified DTNs unqualified as of 8/22/01, used in 28 AMRs**
 - 61 impact assessments conducted due to repeat usage in multiple AMRs
- **Of the 61 impact assessments**
 - 41 (67%) were determined not to significantly affect the output of the AMR
 - 49 (80%) were determined not to significantly affect the input to TSPA-SR
*output not directly used in TSPA
no new sensitivity analyses were done*
 - 61 (100%) were determined not to significantly affect the output from TSPA-SR



Example Explanation for Insignificance of DTN on TSPA Output

- **SZ colloid facilitated transport AMR**
 - 3 unqualified DTNs provide basis for colloid transport in fractured volcanic units
 - DTNs affect irreversibly sorbed radionuclides on colloids
 - Irreversible colloid transport is less significant than non-colloidal transport of Tc and Np during regulatory time period
 - Delay of transport through alluvium is more significant than delay in fractured volcanics
 - Dose is not sensitive to colloid transport in fractured volcanic units



Summary of Results of Software Qualification and Impact Assessments

- **98% of all software codes used in support of TSPA-SR have been qualified**
 - The 80% software qualification commitment has been met
- **Seven unique software codes (and one platform variant) required assessments for impact to TSPA-SR**
 - Software impact assessments, based on testing the software used in the analysis, have concluded that there is no impact on having used unqualified software
- **Single use software routines and macros used in 10 AMRs have been reviewed. No changes were required in the software, therefore there is no impact on their output (DR-39)**

*now down to
3 AMRS*



Impact of Unqualified Data and Software on Supplemental Science Performance Analyses (SSPA) Results

- SSPA used some ^{unqualified} data (literature and preliminary data) and software (modifications from baselined software) for its analyses
- SSPA was conducted, in part, to provide insights and test significance of models and parameters used in TSPA-SR (as documented in Technical Work Plan)
- As such, unqualified data and software used in SSPA may be considered corroborative in nature
- If data and software are used in subsequent AMR revisions, they will be appropriately qualified in accordance with applicable procedures



Summary

- **DOE provided summary of impact assessments of unqualified data and software to NRC on 8/31/01**
- **Impact assessments concluded there was no impact of having used unqualified data or software in the production of TSPA-SR**
- **Impact assessments were attached to letter**
- **Impacts of unqualified data and software on SSPA results were consistent with the scope and objectives of the analyses documented in SSPA**

