

**Attachment 3**

**Presenter's Slides**



# **Key Technical Issue - Issue Resolution Status**

**NRC/DOE Technical Exchange  
Discussion of Future Interactions  
February 5, 2002**

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# Presentation Outline

- Status of Key Technical Issue (KTI) Subissues
- Schedule and Status of KTI Agreements
- KTI Agreements – Moving Forward
- Current NRC Staff Activities
  - Planning Future Issue Resolution Meetings
  - Risk-Insights in the Issue Resolution Process
  - Integrated Issue Resolution Status Report
- Summary

# Status of KTI Subissues

- Technical exchanges have been conducted on all the KTIs
- One Pre-Closure meeting has been conducted, additional meetings are needed
- The 37 KTI Subissues are currently characterized as either closed or closed-pending
- The technical exchanges resulted in 293 NRC/DOE agreements

# **Schedule and Status of KTI Agreements**

- As of January 31, 2002, DOE has submitted information pertaining to 88 agreements
- The DOE schedule for providing information on the remaining agreements is as follows:
  - 88 are due in FY02
  - 84 are due in FY03
  - 33 are due by license application

# KTI Agreements – Moving Forward

- KTI Agreements vehicle for issue resolution
- Future Technical Exchanges
  - Use of NRC and DOE risk insights
  - DOE's plan to address KTI agreements
  - DOE's Repository Safety Strategy
- Refine information gaps

# DOE's Plan to Address KTI Agreements

- NRC's understanding of DOE's integrated plan
  - Includes work scope, logic-based schedule, and resource loading
  - Addresses more than just KTI agreements
  - Reflects the insights of DOE technical and management staffs
  - Provides DOE with a tool to guide interactions on KTI agreements
- NRC position regarding the DOE integrated plan
  - NRC will not review or endorse plan
  - Is one way for DOE to address what work needs to be completed for KTI agreements

# Communications

- NRC KTI leads responsible for agreements
- Continue interactions
  - Technical Exchanges
  - Appendix 7 Meetings
  - Letters
  - Status Calls



# Current NRC Staff Activities

- Planning Future Issue Resolution Meetings
  - Goals for this meeting
    - Determine priority, type, format, and timing of future meetings
  - Key inputs
    - DOE plan for addressing agreements
    - DOE Repository Safety Strategy

# **Current NRC Staff Activities – Cont.**

- Risk-Insights in the Issue Resolution Process
  - NRC used risk-insights in preparation for issue resolution meetings
  - Risk-insights initiative – discussed further in next presentation
  - Future issue resolution meetings will also use risk-insights
    - Risk-insights will help further refine information gaps

# **Current NRC Staff Activities – Cont.**

- Integrated Issue Resolution Status Report
  - Will document the status and basis of issue resolution
  - Will follow the Yucca Mountain Review Plan (YMRP) format
  - It is expected to be issued in Spring 2002
  - First version will discuss the KTIs, Pre-Closure, and Quality Assurance areas
  - Future versions will provide an update and include the remaining areas within the YMRP

# Summary

- Progress is being made on issue resolution
- NRC staff is actively monitoring and evaluating DOE responses to the agreements
- DOE needs to present its FY02 to license application plan
- NRC staff will continue to refine use of risk-insights
- The next round of technical exchanges will further refine the information gaps

## Backup Slides

# Issue Resolution Terminology

- Closed – Issues are designated as closed if the DOE approach and available information acceptably address NRC staff questions such that no information beyond what is currently available will likely be required for regulatory decision making at the time of initial license application.
- Closed-Pending – Issues are designated as closed-pending if the NRC staff has confidence that DOE's proposed approach, together with DOE's agreements to provide the NRC with additional information (through specified testing, analysis, etc.) acceptably address the NRC's questions such that no information beyond that provided, or agreed to, will likely be required at the time of initial license application.
- Open - Issues are designated as open if the NRC staff has identified questions regarding the DOE approach or information, and the DOE has not yet acceptably addressed the questions or agreed to provide the necessary additional information in the license application.

# Status of KTI Subissues

KTI	Subissue 1	Subissue 2	Subissue 3	Subissue 4	Subissue 5	Subissue 6
USFIC	Closed	Closed	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending
IA	Closed-Pending	Closed-Pending	N/A	N/A	N/A	N/A
CLST	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending
SDS	Closed-Pending	Closed-Pending	Closed-Pending	Closed	N/A	N/A
RT	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending	N/A	N/A
TEF	Closed-Pending	Closed-Pending	N/A	N/A	N/A	N/A
ENFE	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending	N/A
RDTME	Closed	Closed-Pending	Closed-Pending	Closed	N/A	N/A
TSPAI	Closed-Pending	Closed-Pending	Closed-Pending	Closed-Pending	N/A	N/A

# Status of KTI Agreements

- KTI Agreement Tracking Categories
  - 1) Not Received - NRC has not received any information pertaining to the agreement
  - 2) Partly Received - NRC has received some of the information pertaining to the agreement
  - 3) Received - NRC has received all the information pertaining to the agreement and the material is under consideration
  - 4) Complete - NRC has reviewed the information and found it satisfies the agreement
  - 5) Need Additional Information - NRC has reviewed the information and needs additional information



# Status of KTI Agreements – Cont.

KTI Title	Agreements Reached	Documentation Received for Agreement	Documentation Partly Received for Agreement	Documentation Not Received for Agreement	Need Additional Information	Agreement Complete
USFIC	27	0	1	22	0	4
IA	22	0	1	14	0	7
CLST	58	2	3	32	13	8
SDS	10	6	2	0	2	0
RT	29	5	2	22	0	0
ENFE	41	14	7	20	0	0
TEF	15	0	4	7	0	4
RDTME	23	0	2	21	0	0
TSPAI	58	1	0	57	0	0
General	1	0	0	1	0	0
Pre-Closure	9	0	0	9	0	0
Totals	293	28	22	205	15	23



# **Use of Risk Insights in the Issue Resolution Process**

**NRC/DOE Technical Exchange  
Discussion of Future Interactions  
February 5, 2002**

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# Presentation Outline

- Issue resolution and risk insights overview
- Risk insights from performance assessment
- Review of agreements
- Use of risk insights in future discussions

# Issue Resolution Overview

- Goal of issue resolution
- Identify gaps in approach
  - Data, analysis, and models
  - What can go wrong, its likelihood, its consequences
  - Stakeholder concerns
- Risk insights
  - Department of Energy (DOE)
  - NRC, Center, and other interested parties

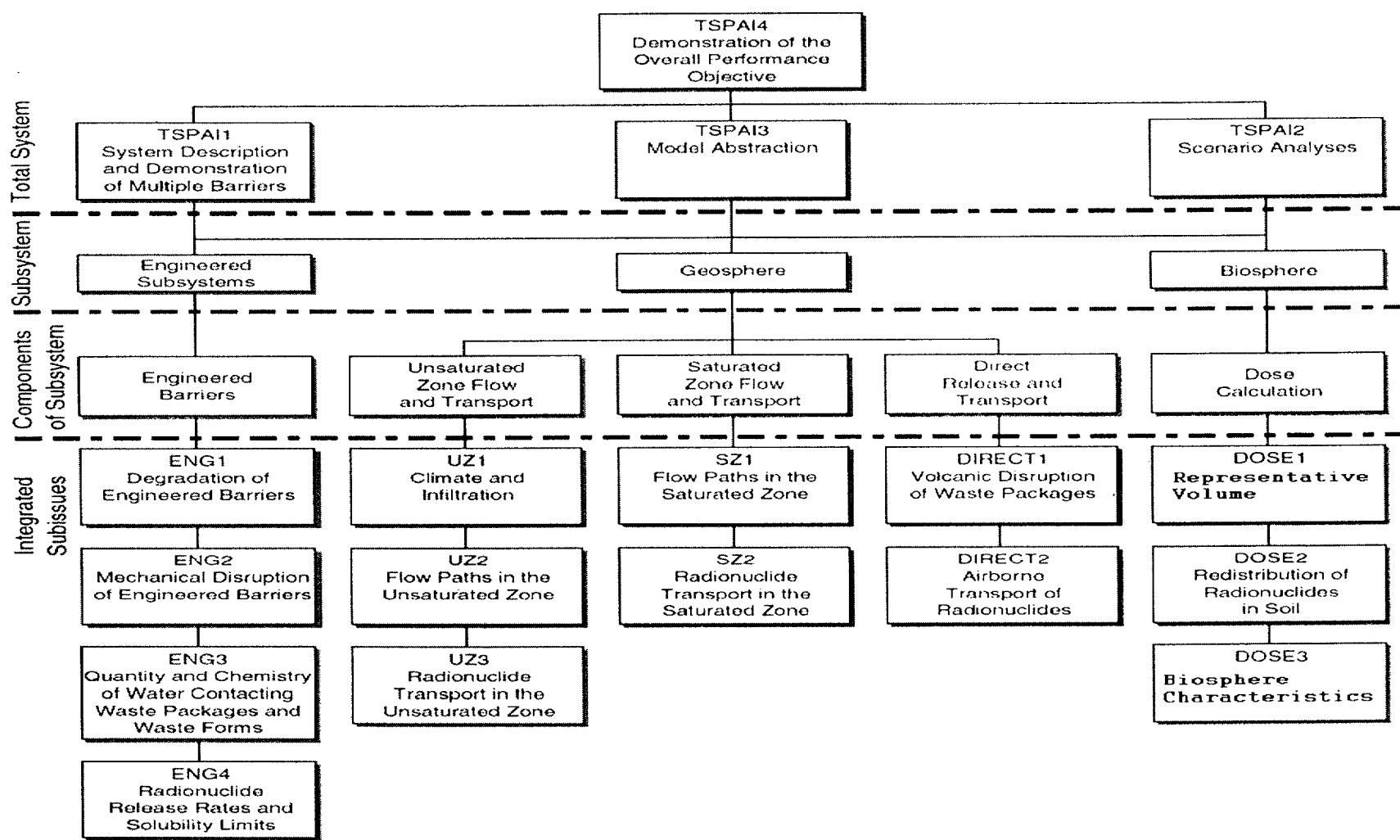
# Applying Risk Insights

- Issue resolution meetings
  - DOE presentations
  - Performance assessment staff input
  - Agreements

# Performance Assessment

- Iterative approach
  - Risk information and insights refined
  - Identify the parts important to waste isolation and safety
  - Quantify uncertainties
  - Conservatisms reduced, realism increased

# Identification of Risk Important Features of a Repository System



# Focus of Issue Resolution

- Identified as risk significant
  - Degradation of engineered barriers
  - Quantity and chemistry of water contacting waste packages and waste form
  - Radionuclide transport in the saturated zone
  - Volcanic disruption of the waste package
  - Biosphere characteristics
- Important in DOE's approach
  - Mechanical disruption of engineered barriers
  - Flow paths in the unsaturated zone
  - Radionuclide transport in the unsaturated zone



# Review of Agreements

- Qualitative evaluation
- Level of complexity
- DOE's Repository Safety Strategy

# Level of Complexity of Subissue Agreements

Closed-Pending Subissue	Level of Complexity of Agreements
USFIC 3	Moderate
USFIC 4	Major
USFIC 5	Moderate to Major
USFIC 6	Minor to Moderate
IA 1	Minor
IA 2	Moderate to Major
CLST 1	Moderate to Major
CLST 2	Major
CLST 3	Moderate
CLST 4	Moderate to Major
CLST 5	Minor to Moderate
CLST 6	Minor
SDS 1	Major
SDS 2	Minor to Moderate
SDS 3	Moderate to Major

Level of Complexity of Subissue Agreements – Cont.

Closed-Pending Subissue	Level of Complexity of Agreements
RT 1	Moderate
RT 2	Major
RT 3	Moderate to Major
RT 4	Minor to Moderate
TEF 1	Minor
TEF 2	Moderate to Major
ENFE 1	Moderate to Major
ENFE 2	Major
ENFE 3	Moderate
ENFE 4	Moderate to Major
ENFE 5	Minor to Moderate
RDTME 2	Minor
RDTME 3	Major
TSPAI 1	Minor to Moderate
TSPAI 2	Moderate to Major
TSPAI 3	Major
TSPAI 4	Moderate

# Use of Risk Insights in Future Discussions

- Risk Insights Initiative
  - Document risk insights
  - Use in the issue resolution process
  - Enhanced communications
- Further refine information gaps
- Focus future NRC/DOE meetings

# Summary

- Identify information gaps
- Use performance assessment insights
- Further refine information gaps in future issue resolution meetings



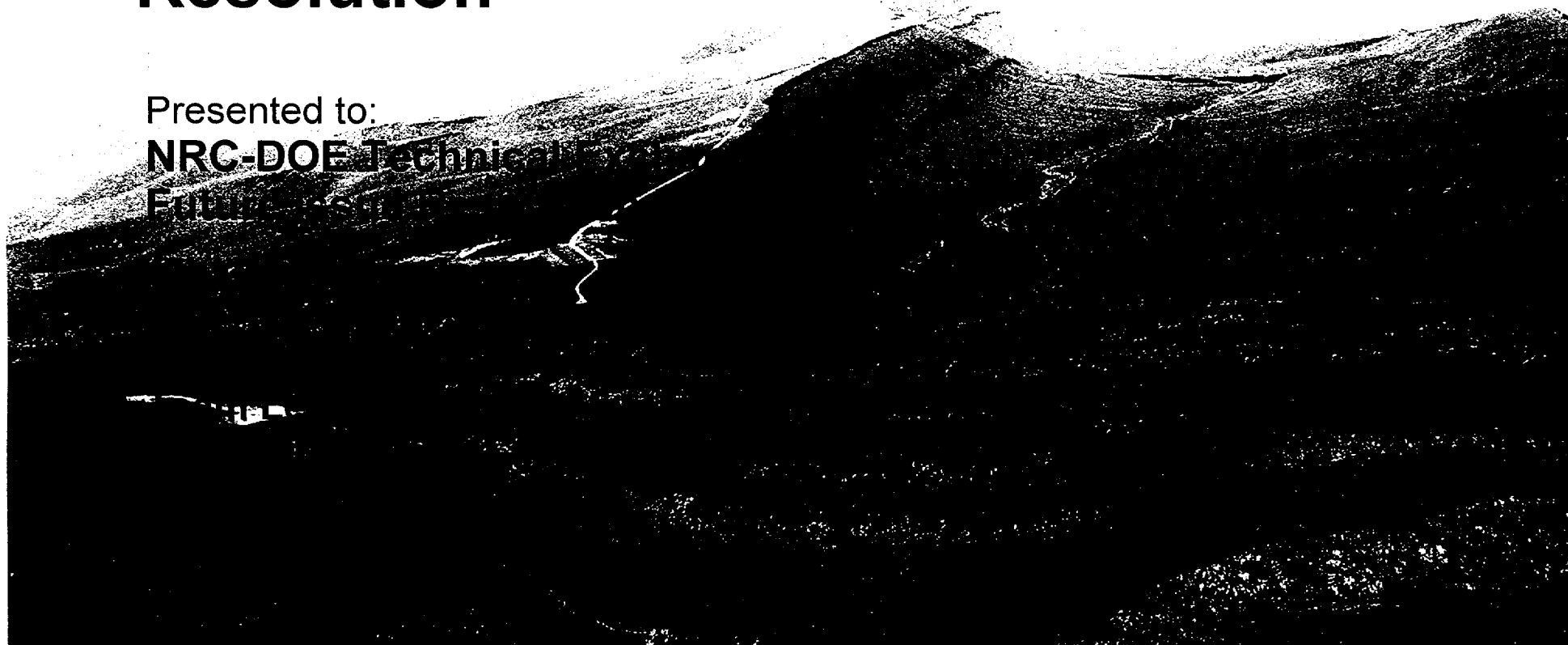
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# Risk-Informed, Performance-Based Considerations for Key Technical Issue Resolution

Presented to:

**NRC-DOE Technical Panel**  
**Future Forum**



# Outline

- **Evaluation of Status of Key Technical Issue Agreements**
- **Risk-Informed Performance-Based (RIPB) Considerations for Key Technical Issue Resolution**
  - Overview
  - Examples of regulatory guidance
  - DOE approach to identification of risk
  - Introduction to planning effort
- **Summary**

# **Evaluation of Status of Key Technical Issue Agreements**

- **Comparison of NRC's and DOE's status of agreements**
  - based on information presented by NRC Technical Leads and Center staff at January 9, 2001 ACNW meeting
- **Results**
  - general agreement on KTI status between NRC's evaluation and DOE's analysis
  - however, a few items have been identified that will require discussion to resolve discrepancies



# Evaluation of Status of Key Technical Issue Agreements

- For example:
  - ♦ Igneous Activity: 1 mrem/yr presented as DOE risk value
  - ♦ Repository Design and Thermal Mechanical Effects: scope of work needed for justification of DOE's position on the effects of drift collapse requires clarification
  - ♦ Evolution of the Near Field Environment: additional discussion on the technical basis needed for transport parameters if retardation is used
- DOE will address these items in subsequent interactions on relevant KTI agreements

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **This approach focuses attention on activities most important to protecting safety**
- **Establishes objective criteria for evaluating performance**
- **Requires measurable parameters for monitoring performance**
- **Provides flexibility in determining how to best meet performance criteria to improve results**
- **Focuses on results as the primary basis for decision making**

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **DOE's development of approach to risk insights for pre-and post-closure safety relies on NRC regulations and guidance. Examples include:**
  - **1998: Reg. Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis"**
  - **1999: SECY-98-144, "White Paper on Risk-Informed and Performance-Based Regulation"**
  - **1999: SECY-99-100, "Framework for Risk-Informed Regulation in the Office of Nuclear Materials Safety and Safeguards (NMSS)"**
  - **2001: 10 CFR Part 63, "Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada; Final Rule"**

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **SECY 98-144 “Risk-Informed and Performance-Based Regulation”:**
  - Risk insights, engineering analysis and judgment, and performance history are used to:
    - ♦ Focus attention on the most important activities\*
    - ♦ Provide flexibility to determine how to meet the established performance criteria\* in a way that will encourage and reward improved outcomes
    - ♦ Focus on the results as the primary basis for regulatory decision-making\*

\*Emphasis added

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **1999: SECY-99-100, “Framework for Risk-Informed Regulation in the Office of Nuclear Materials Safety and Safeguards (NMSS)”:**
  - **Framework for applying risk assessment methods to regulation of activities including waste disposal:**
    - ♦ **Focus NRC and licensee resources in areas commensurate with their importance to safety and health\***
    - ♦ **Provide framework for using risk information in all regulatory matters**
    - ♦ **Allow use of risk information to provide flexibility in licensing\* and operational areas**

**\* Emphasis added**

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **Relevant Information from 10 CFR Part 63:**
  - **Eliminates arbitrary or prescriptive criteria and detailed requirements**
  - **Establishes a coherent body of risk-informed criteria compatible with the overall philosophy of RIPB regulation**
  - **Credible Total System Performance Assessment is the best means to provide information for an informed decision\***
  - **Uncertainties must be addressed, technical basis for models must be provided, multiple barriers must be demonstrated\***

**\* Emphasis added**

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **10 CFR Part 63 establishes overall performance objectives:**
  - DOE must demonstrate performance objectives are met\*
  - NRC independent review determines whether NRC agrees
  - DOE provided flexibility for extent and focus of site characterization
  - DOE may place greater or lesser reliance on individual components of the repository system when deciding how best to achieve overall safety objective\*
- \* Emphasis added
- **Yucca Mountain Review Plan**
  - needed for LA planning;
  - will provide additional guidance to DOE

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **Performance Assessment is used as a tool:**
  - to provide information needed for decision making
  - risk insights derived from PA are well suited to address issues associated with waste disposal:
    - ♦ Identify and emphasize components and activities that are most important to public health and safety
    - ♦ Results as primary basis for decision making
    - ♦ Reliance dependent on effect on overall safety objective



# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **DOE is currently evaluating and prioritizing work using this approach:**
  - **Workscope and schedule will be defined in LA planning effort now underway**
  - **Goal is to prioritize identified information needs based on relevance to TSPA approach and safety case:**
    - ♦ **impacts on included features, events and processes**
    - ♦ **impacts on regulatory performance objectives**
    - ♦ **impacts on treatment of uncertainty and contribution to multiple lines of evidence**

# **Risk-Informed Performance-Based Considerations for Key Technical Issue Resolution**

- **Workscope prioritization will:**
  - be results based
  - focus resources on aspects most important to public health and safety
  - use Performance Assessment analyses to assess and confirm risk significance
  - be based on documented judgement of technical staff
  - include an independent management review of results
- **Work needed to address KTI agreements will be evaluated and scheduled using a risk-informed, performance based context**

# Summary

- **DOE's Risk-Informed Performance-Based (RIPB) approach is consistent with NRC's guidance**
- **DOE will keep NRC informed of results of planning efforts and KTI resolution schedule**
- **Regulatory interactions will focus on resolution of agreements based on schedule for completion of documents, reports, and activities**
- **DOE plans to use RIPB approach as a framework for future interactions addressing KTI agreements**



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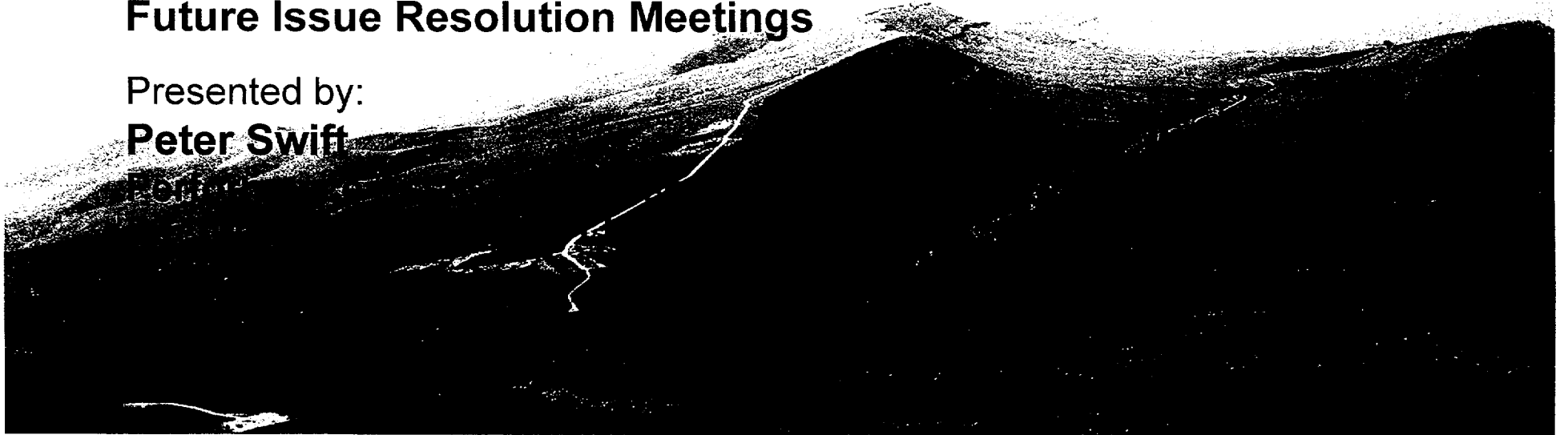


# Performance Assessment Prioritization Overview

Presented to:  
**NRC-DOE Technical Exchange on  
Future Issue Resolution Meetings**

Presented by:  
**Peter Swift**

For more information, contact:



# Goals

- **Prioritization Process:**
  - Evaluate and prioritize work in Performance Assessment
  - Focus on necessary LA work scope
  - Identify and select an overall scope of work that balances project management risks
  - Document the basis for the selected scope of work
- **Technical Workshop:**
  - Develop and review a complete set of inputs to the prioritization process
    - ♦ Alternative work scopes for each model component or group of components
    - ♦ Evaluation of the impacts of the proposed work
  - Develop an initial prioritization of PA work, and document the expected impacts of that scope



# **The Process for Evaluating and Prioritizing Proposed Work**

- **PA Prioritization team defines attributes by which work scope will be evaluated, and develops guidance for providing inputs**
- **Department managers define alternative work scopes to be considered**
- **Department managers and TSPA modelers provide initial estimates of the impact of proposed work on the attributes**
- **PA prioritization team reviews inputs and suggests modification**



# **The Process for Evaluating and Prioritizing Proposed Work**

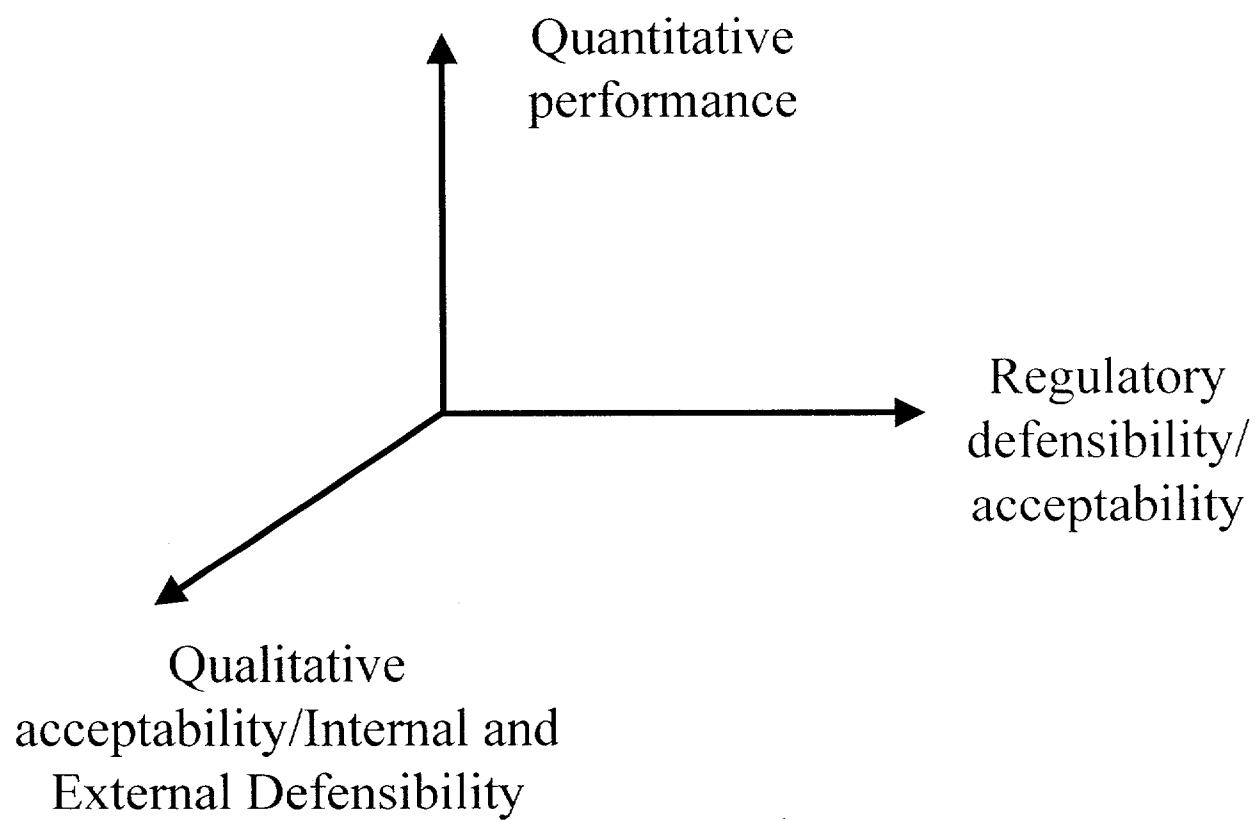
(Continued)

- **Workshop with Department Managers and PA Prioritization team to refine and finalize work scopes and inputs**
- **Benefits, costs, and schedule implications of alternative work scopes used to develop initial prioritization of PA work**
- **Initial prioritization complete**
- **Management review of prioritization**
- **Input to Budget team**



# Attributes for Evaluating Work Scope

- Attributes defined based on the “three dimensions”





# Sixteen Specific Attributes Defined for the Three Dimensions

- **Quantitative Performance**
  - Change in 10,000 year mean annual dose
  - Change in estimated groundwater concentration
  - Change in dose associated with the human intrusion scenario
- **Regulatory Defensibility**
  - Ensure inclusion of credible FEPs/exclusion of unnecessary FEPs
  - Impact on ability to identify and describe multiple barriers
  - Impact on ability to meet specific KTI agreements
- **Internal and External Defensibility**
  - Impact on confidence of internal reviewers in the technical basis
  - Impact on confidence of external reviewers in the technical basis
  - Additional quantitative metrics
    - ♦ Change in time to 15 mrem
    - ♦ Change in uncertainty in system performance
    - ♦ Change in 10,000 year mean dose conditioned on early WP failure
    - ♦ Change in peak dose
    - ♦ Change in consequences associated with igneous intrusion
  - Impact on representation of uncertainty at the parameter level
  - Impact on ability to defend conceptual model representation



# Overview of Guidance for Developing and Evaluating Proposed Work

- **Department managers to redefine work scope:**
  - Work grouped by TSPA model component
  - Three alternative work scopes defined for each model component:
    - ♦ Level 1 Scope: QA and Validation (required)
    - ♦ Level 2 Scope: Risk Informed (optional)
    - ♦ Level 3 Scope: (optional)
- **Managers to provide input on how well each proposed work scope meets the defined set of attributes**
  - Questionnaire distributed to facilitate collection of input



# Translating Inputs into Benefit Estimates

- The benefits of the proposed work scope depend on what it is estimated to achieve, and how much the project values that achievement
- Department managers and TSPA modelers developed estimates of what the work scope is expected to accomplish, in terms of the attributes
- Work scopes and evaluations were discussed and revised at by technical staff and technical department managers at a workshop
- Project managers developed value functions and weights associated with the attributes



# Translating Inputs into Benefit Estimates

(Continued)

- **Multi-attribute utility model developed to combine technical and value judgements into an overall measure of benefit (called “utility” - a unitless measure of benefit scaled between 0 and 1)**
- **Estimated utility of the proposed work will be used, along with cost information, to develop an initial prioritization of work**

# Illustration of Utility Calculations as Implemented in a Spreadsheet Model

$$Utility = \sum p_i * v_i * w_i$$

Example:

likelihood (p)

impact (v)

weight (w)

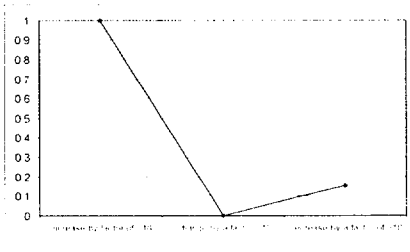
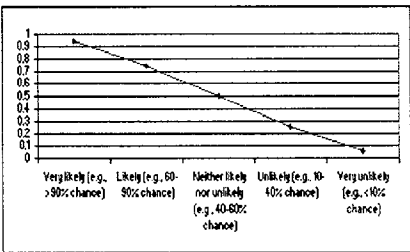
For each attribute,  
users enter

PA managers will  
define initial  
value functions  
and attribute  
weights

Calculate utility  
for that attribute

Likely (e.g., 60-90% chance)

Increase by factor of >10



75%

\*

1.00

\*

.128

=

.096

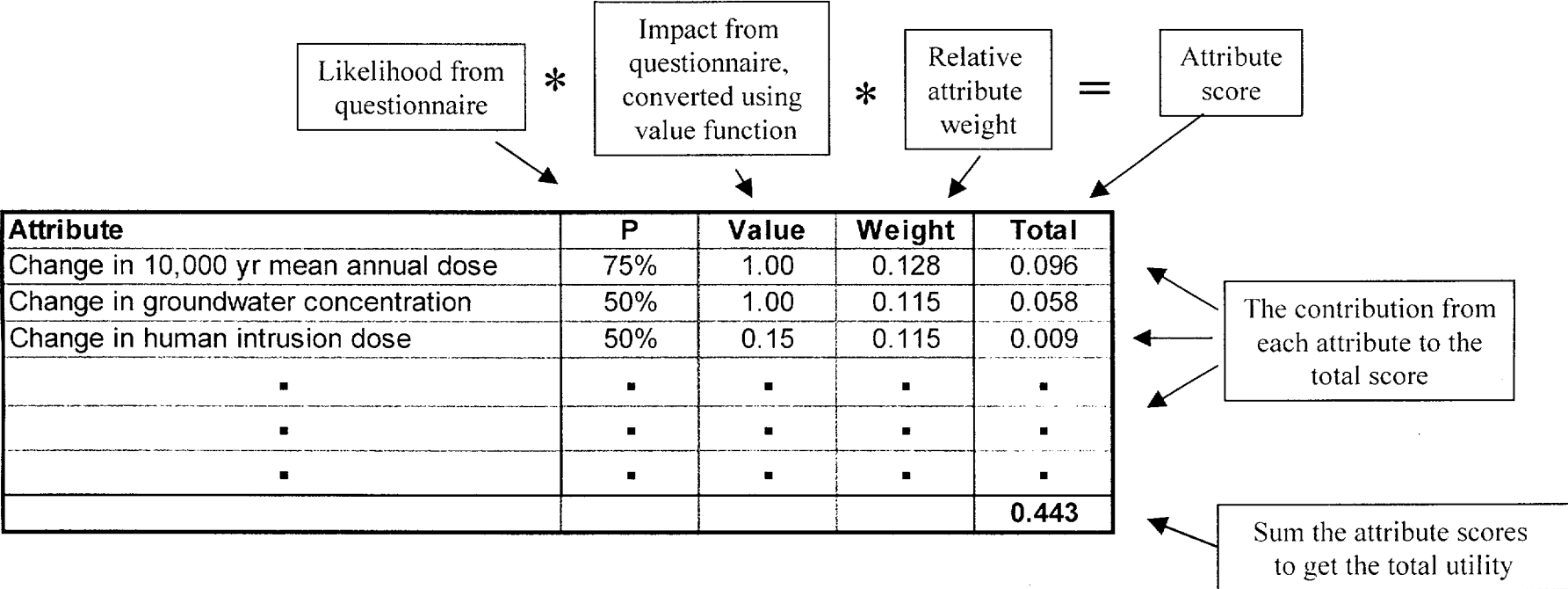
Attribute  
score

Repeat for each attribute  
and sum to get the total utility

:  
---  
.443



# Illustration of Utility Calculations as Implemented in a Spreadsheet Model



# **Caveats Associated with Preliminary Results**

- Model results are only a decision-aiding tool**
- Cost assumptions not always consistent**
- Results not constrained by schedule, so schedule implications may not always be clear**
- Differences among department perspectives on impact of their work may remain despite workshop discussion**
- Doesn't include all work scopes (e.g., TSPA, testing interface with design, management)**
- Some questions didn't fully capture what we were after (e.g. uncertainty question didn't measure uncertainty changes; FEP screening question did not consider impact of FEP)**

# **Caveats Associated with Preliminary Results**

(Continued)

- **Utility-only rankings ignore costs to achieve those impacts. Utility/Cost evaluations for very large work packages may perform more poorly than smaller work packages since cost may tend to dominate**
- **Weights used in the example here are an average of two people, different weights may lead to different results**
- **Results don't show whether impact has a positive or negative impact on performance; both negative and positive impacts are important**





# Detailed Example

## EBS Flow & Transport

- **Three different work scopes were defined**
- **Work scope evaluations from questionnaire and workshop**
  - spreadsheet input sheets, with the answers to the questions for those work scopes
- **Bar chart showing the utility of each work scope**
  - additional plots possible showing incremental change in utility between scope levels

# Detailed Example

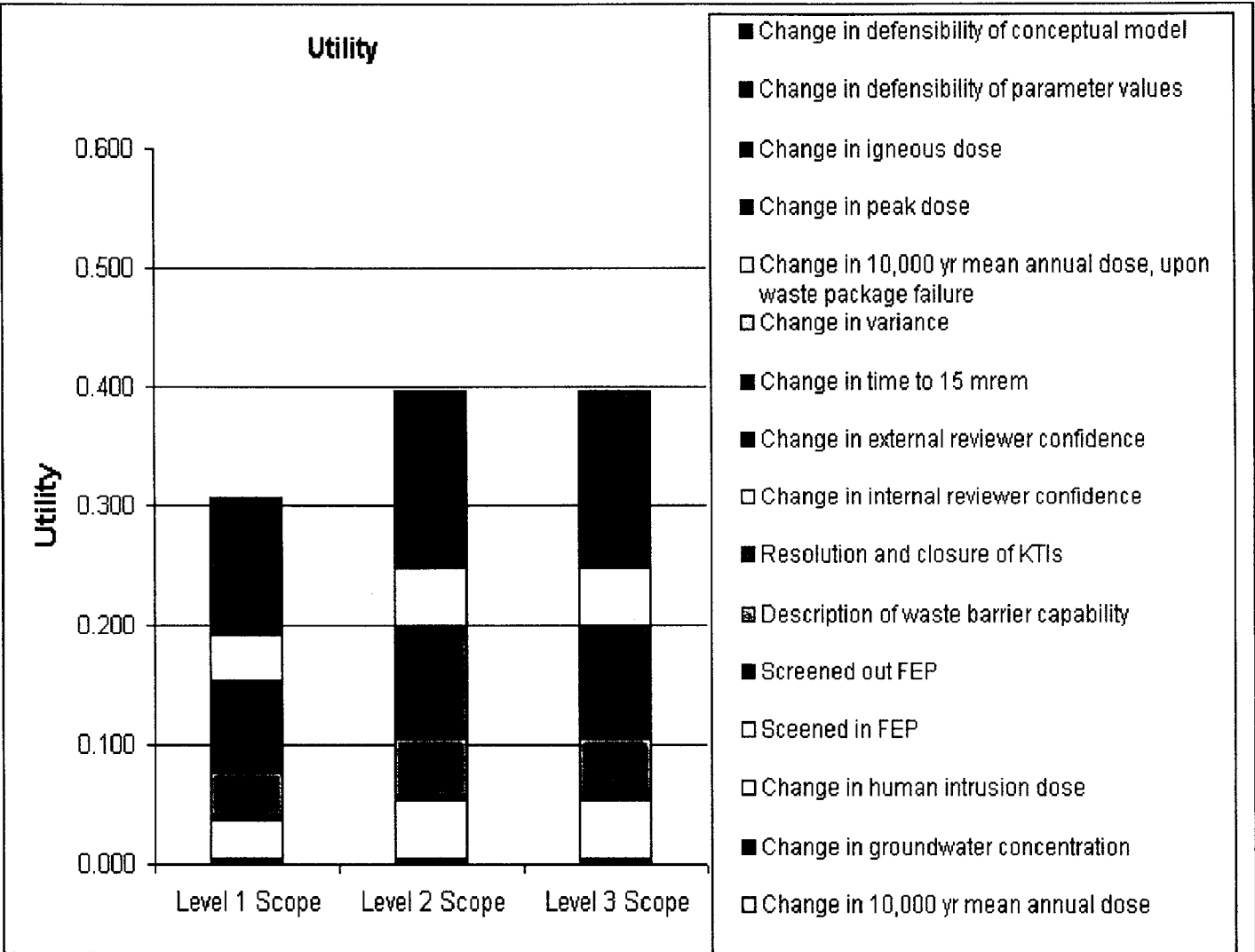
## EBS Flow & Transport Inputs

TSPA Model Component (select from drop-down)	Level 1 Scope	Level 2 Scope	Level 3 Scope
EBS Radionuclide Flow and Transport		<input checked="" type="checkbox"/> Check if this scope is used	<input checked="" type="checkbox"/> Check if this scope is used
Enter Cost for Each Scope Considered-->	\$3,000,000	\$3,600,000	\$4,400,000
<b>1. IMPACTS ON COMPLIANCE WITH QUANTITATIVE PERFORMANCE OBJECTIVES</b>			
1a) How likely are the activities in the proposed scope to change the results of the model component significantly enough that they could impact the 10,000-year mean annual dose?	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)
1b) If the activities change the model component results significantly, what is the likely change to the 10,000-year mean annual dose?	Change by a factor <10	Change by a factor <10	Change by a factor <10
1c) How likely are the activities in the proposed scope to change model component performance in a way that could impact estimated groundwater concentrations?	Neither likely nor unlikely (e.g., 40-60)	Likely (e.g., 60-90% chance)	Likely (e.g., 60-90% chance)
1d) If the activities change the estimated groundwater concentrations, what is the likely change?	Change by a factor <10	Change by a factor <10	Change by a factor <10
1e) How likely are the activities in the proposed scope to change the model component performance in a way that may impact the 10,000-year mean annual dose associated with the human intrusion scenario?	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)
1f) If the activities change the model component results associated with the human intrusion scenario results, what is the likely change to estimated mean annual dose?	Change by a factor <10	Change by a factor <10	Change by a factor <10
<b>2. IMPACTS ON REGULATORY</b>			
2a) How likely are the activities in the proposed scope to result in a new FEP being screening in?	Neither likely nor unlikely (e.g., 40-60)	Likely (e.g., 60-90% chance)	Likely (e.g., 60-90% chance)
2b) How likely are the activities in the proposed scope to result in a currently included FEP being screened out?	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)
<b>3. IMPACTS ON COMPLIANCE WITH REQUIREMENTS FOR MULTIPLE BARRIERS</b>			
3a) How likely are the activities in the proposed scope to enhance the ability to identify the barriers important to waste isolation? NO LONGER USED	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)	Very unlikely (e.g., <10% chance)
3b) How likely are the activities in the proposed scope to enhance the description of the ability of a barrier important to waste isolation to limit movement of water or radionuclides?	Likely (e.g., 60-90% chance)	Very likely (e.g., >90% chance)	Very likely (e.g., >90% chance)



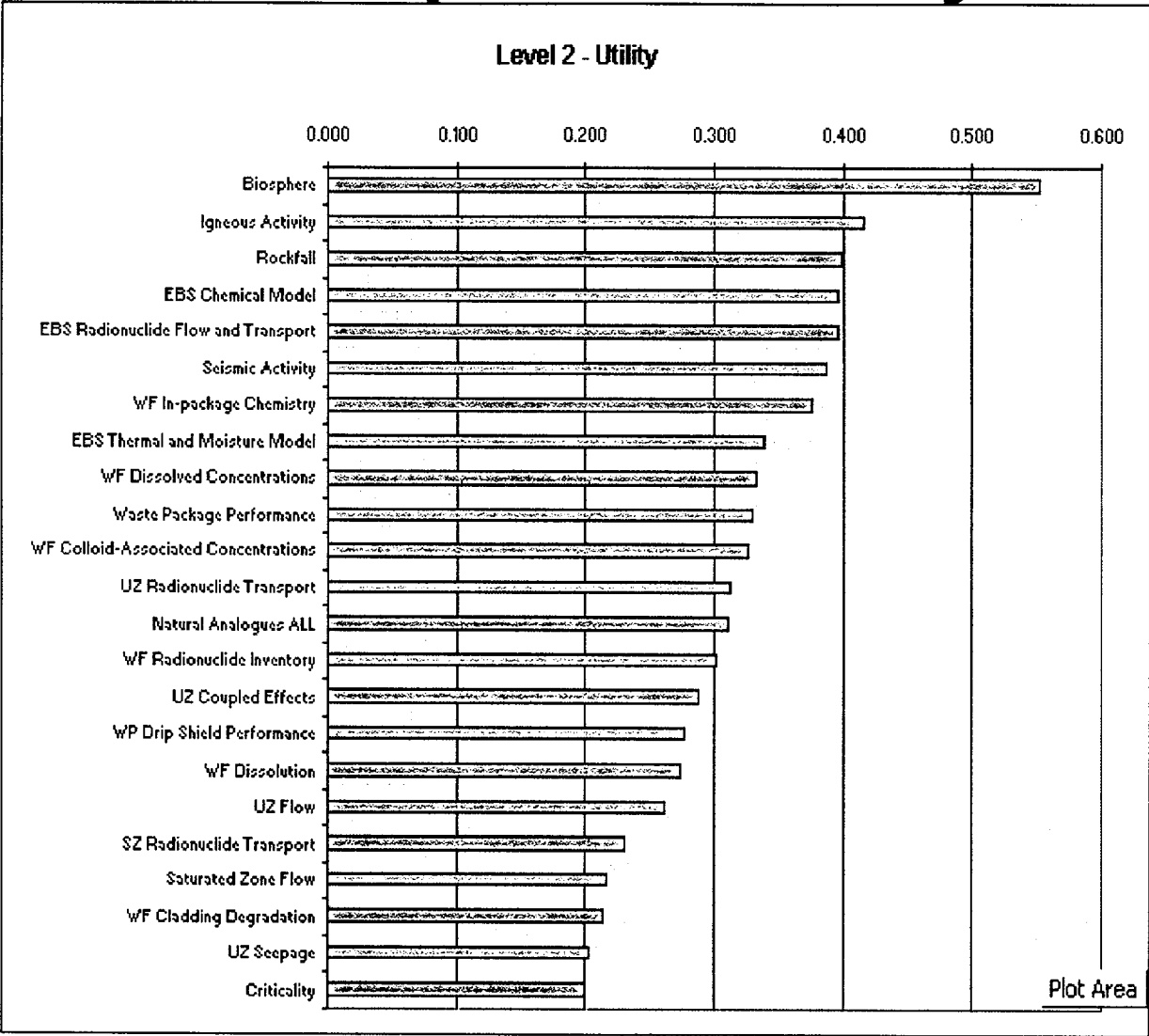
# Detailed Example

## EBS Flow & Transport Utility



# Detailed Example

## Level 2 Scopes Sorted by Utility



# Work Scope Portfolios

- **Building Work Scope Portfolios using just Utility**
  - How the example portfolios are built:
    - ♦ Every work package is assumed to be funded at least at its Level 1 (“QA and Validation”) scope
    - ♦ Work is **ADDED** to the portfolio in order of incremental utility. The first thing added is the increment that adds the most utility
    - ♦ Each subsequent portfolio includes the previous scopes plus the newly added scope
- **Decisions will consider cost as well as utility (i.e., consider rankings by Utility/Cost ratio)**



# Work Scope Portfolios Example

## Sorted by Utility Only

2	Portfolio	Total \$	Total Utility
3	QA and Validation scope for all components	0	5.20
4	-- And, incremental substitutions of...		
5	Igneous Activity, Level 2	0	5.59
6	UZ Seepage, Level 3	0	5.85
7	WF Dissolved Concentrations, Level 2	0	6.10
8	EBS Chemical Model, Level 2	0	6.30
9	WF Radionuclide Inventory, Level 2	0	6.47
10	WF Colloid-Associated Concentrations, Level 2	0	6.63
11	UZ Coupled Effects, Level 2	0	6.78
12	EBS Thermal and Moisture Model, Level 2	0	6.91
13	Seismic Activity, Level 2	0	7.04
14	Waste Package Performance, Level 2	0	7.16
15	UZ Flow, Level 2	0	7.28
16	Criticality, Level 3	0	7.40
17	UZ Climate & Infiltration, Level 3	0	7.50
18	Saturated Zone Flow, Level 2	0	7.60
19	SZ Radionuclide Transport, Level 2	0	7.71
20	UZ Radionuclide Transport, Level 2	0	7.80
21	Biosphere, Level 3	0	7.89
22	WF In-package Chemistry, Level 2	0	7.98
23	EBS Radionuclide Flow and Transport, Level 2	0	8.07
24	WP Drip Shield Performance, Level 2	0	8.16
25	Natural Analogues ALL, Level 2	0	8.23
26	WF Dissolution, Level 3	0	8.29
27	Rockfall, Level 2	0	8.35
28	WF Cladding Degradation, Level 3	0	8.38
29	Igneous Activity, Level 3	0	8.52
30	WF Dissolved Concentrations, Level 3	0	8.58



# Summary

- **Decision aiding tool rather than a decision making tool**
- **Based on both technical and management input**
- **Consideration given to**
  - quantitative and qualitative regulatory requirements
  - confidence in technical defensibility
  - fiscal constraints
- **Decisions will be integrated with other project activities**
  - e.g., design, preclosure, licensing support
- **Basis for decisions will be documented**
- **Decisions will be re-evaluated as new information becomes available**





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



# Talking Points: DOE/NRC Future Meetings and Communications

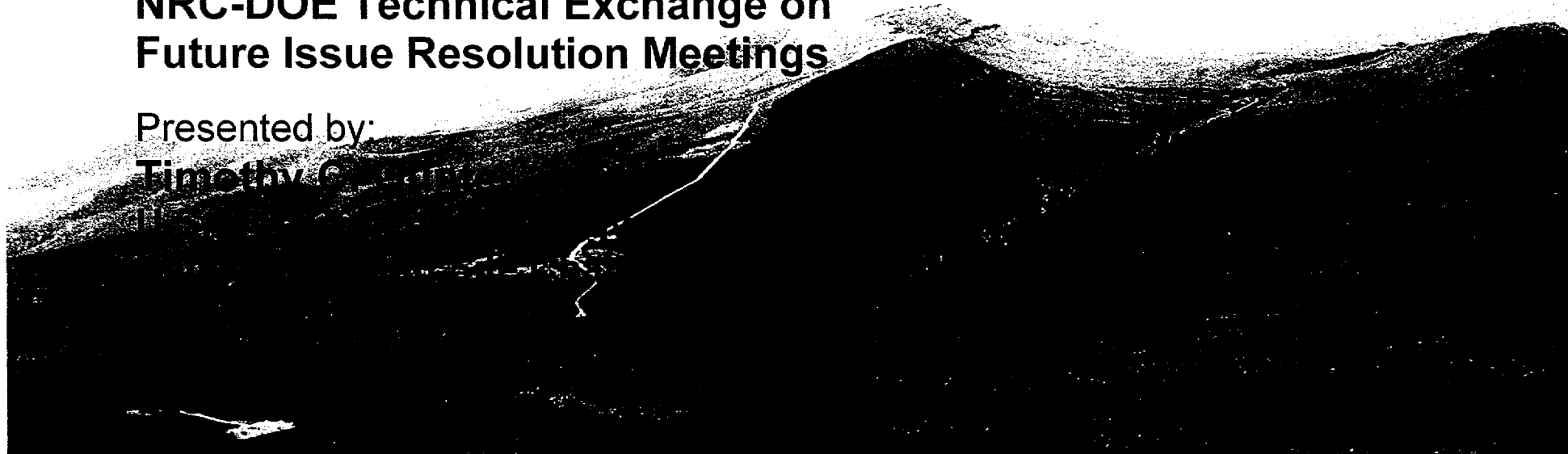
Presented to:

**NRC-DOE Technical Exchange on  
Future Issue Resolution Meetings**

Presented by:

**Timothy C. ...**

**...**





# **Schedule and Format for Future Meetings**

- **Types of Meetings**
- **Identification and Tracking of Issues**
- **Meeting Frequency/Future Schedule**

# Future Communications

- **Communications for KTI Clarification**
- **Focused DOE Responses to KTI Agreements**
- **Documentation for Closing Issues**

INTERACTIONS CALENDAR

2002 JANUARY 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8 o 131 <sup>st</sup> ACNW	9 o 131 <sup>st</sup> ACNW	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29 o NWTRB Winter Board Meeting	30 o NWTRB Winter Board Meeting  o NRC/DOE Agenda setting telecon (2/5 NRC meeting)	31 o NRC/DOE Telecon – Premeeting (2/5)  o PSHA Expert Elicitation Feedback Mechanism Telecon		

INTERACTIONS CALENDAR

2002 February 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5 o KTI: Meeting Schedule Look-a-head and Process  o NEI Meeting: Waste Form Task Force	6 o KTI: Meeting Schedule Look-a-head and Process	7 o 132 <sup>nd</sup> ACNW	8 o 132 <sup>nd</sup> ACNW	9
10	11	12	13 o NRC/DOE Telecon – Model Validation & Data Qualification Issues	14	15	16
17	18	19	20	21	22	23
24	25 o ANS/ASME/DECO /NEA/IAEA Waste Management Symposium	26 o ANS/ASME/DECO /NEA/IAEA Waste Management Symposium	27 o ANS/ASME/DECO /NEA/IAEA Waste Management Symposium  o ACNW Policy & Planning	28 o ANS/ASME/DECO /NEA/IAEA Waste Management Symposium  o ACNW Policy & Planning  o Appendix 7 – Enhanced FEPs Process		

INTERACTIONS CALENDAR

2002 March 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 o ACNW Policy & Planning	2
3	4	5 o Nuclear Regulatory Information Conference	6 o Nuclear Regulatory Information Conference	7 o Nuclear Regulatory Information Conference	8	9
10	11	12 o Appendix 7 - RDTME	13	14	15	16
17	18	19 o 133 <sup>rd</sup> ACNW	20 o 133 <sup>rd</sup> ACNW	21 o 133 <sup>rd</sup> ACNW	22	23
24	25	26 o TE – OMII (formerly Performance Improvement Transition Plan)	27 o Appendix 7 – KTI Agreement Schedule	28	29	30

INTERACTIONS CALENDAR

2002						
APRIL						
2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2 o TE – Electronic Information Exchange	3 o Quarterly QA/KTI Meeting	4 o Quarterly Management Meeting	5	6
7	8	9	10	11	12	13
14	15	16 o 134 <sup>th</sup> ACNW	17 o 134 <sup>th</sup> ACNW	18 o 134 <sup>th</sup> ACNW o TE - Preclosure	19	20
21	22	23	24 o Meeting – LA Process Kick-Off	25	26	27
28	29	30		TBD o Meeting – CLST KTIs: Subissues 1&2 and CLST RAIs		

INTERACTIONS CALENDAR

2002 MAY 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7 o NWTRB Spring Board Meeting	8 o NWTRB Spring Board Meeting	9	10	11
12	13	14	15 o TE – KTI Agreement CLST 5.01 (Criticality)	16	17	18
19	20	21 o 135 <sup>th</sup> ACNW	22 o 135 <sup>th</sup> ACNW	23	24	25
26	27	28	29	30 o Meeting – DOE Safety Case	31	

INTERACTIONS CALENDAR

2002 JUNE 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
TBD: Quarterly QA/KTI & Management Meeting	TBD: FY02 Budget/Planning Results including KTI: Meeting Schedule Look- ahead (June 2002 – December 2003					1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18 o 136 <sup>th</sup> ACNW	19 o 136 <sup>th</sup> ACNW	20 o 136 <sup>th</sup> ACNW	21	22
23	24	25 o Appendix 7 – TSPA Methods and Assumptions	26 o Appendix 7 – TSPA Methods and Assumptions	27	28	29



INTERACTIONS CALENDAR

2002 JULY 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16 o Appendix 7 - Preclosure	17 o Meeting – Design Alternatives	18	19	20
21	22	23 o 137 <sup>th</sup> ACNW	24 o 137 <sup>th</sup> ACNW	25 o 137 <sup>th</sup> ACNW	26	27
28	29	30	31			

INTERACTIONS CALENDAR

2002 AUGUST 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
TBD: Appendix 7 – SDS KTI				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26 o Meeting – LA Process Follow-Up	27	28	29	30	31

INTERACTIONS CALENDAR

2002 SEPTEMBER 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10 o NWTRB Fall Board Meeting	11 o NWTRB Fall Board Meeting	12	13	14
15	16	17	18	19	20	21
22	23	24 o 138 <sup>th</sup> ACNW	25 o 138 <sup>th</sup> ACNW	26 o 138 <sup>th</sup> ACNW	27	28
29	30					TBD: Quarterly QA/KTI & Management Meeting

INTERACTIONS CALENDAR

2002 OCTOBER 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22 o 139 <sup>th</sup> ACNW	23 o 139 <sup>th</sup> ACNW	24 o 139 <sup>th</sup> ACNW	25	26
27	28	29	30	31		

INTERACTIONS CALENDAR

2002 NOVEMBER 2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13 o TE – KTI Agreement CLST 5.01 (Criticality)	14	15	16
17	18	19 o 140 <sup>th</sup> ACNW	20 o 140 <sup>th</sup> ACNW	21 o 140 <sup>th</sup> ACNW	22	23
24	25	26	27	28	29	30

INTERACTIONS CALENDAR

2002						
DECEMBER						
2002						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31			TBD: Quarterly QA/KTI & Management Meeting  TE – 2002 KTI Agreement Wrap-up and 2003 Planning	

INTERACTIONS CALENDAR

TO BE SCHEDULED				
Meeting – 10CFR 63	Discuss DOE’s understanding of the changes made in the final rule	TBD (Spring 2002)	TBD	April Gil/Don Beckman
Meeting - Metal Samples	Update on metal samples CAR, results of root cause on metal sample deficiencies, impact on LA due to non-traceable metal samples	TBD (Spring 2002)	TBD	TBD
Meeting - Configuration Control	Overview of configuration control processes	TBD (late summer/early fall 2002)	TBD	TBD
DOE/SNF Issues/NRC Tech Exchange		TBD (late summer 2002)	TBD	Joe Price/ Mark Wisenburg
Meeting - QAMA Performance Metrics	Brief NRC on the metrics developed by QAMA before the end of the next QAMA review cycle	TBD (Spring 2002)	TBD	TBD
Meeting - Lower Temperature Operating Mode Update	Update NRC on status and potential impact on LA	TBD (late summer/early fall 2002)	TBD	TBD
Meeting - Performance Confirmation vs. Test & Evaluation Program Scope	Overview of testing scopes within PC vs. the TEP	TBD (late summer/early fall 2002)	TBD	TBD
Meeting – Preclosure Design Issues	WP design, classification of SSCs, equipment qualification plan, seismic issues	TBD (Spring 2002)	TBD	TBD