

ATTACHMENT-1

AGENDA

NRC/DOE MANAGEMENT/QUALITY ASSURANCE MEETING
Hillshire Blue Room, Las Vegas, Nevada; with video conference to
NRC Headquarters, Rockville, MD., DOE Headquarters, Room 7F091
and CNWRA, San Antonio, Texas
 April 27, 2000, 8:30 AM to 11:45 AM (PDT)

8:30 AM	INTRODUCTIONS John Greeves Lake Barrett	All NRC DOE
8:45 AM	NRC Program Status Yucca Mountain Review Plan Sufficiency Review KTI Issue Closure Process Status of Part 63	
9:15 AM	DOE Program Update Schedule and Status of Program /SRCR Plans for Pre Closure Activities	Barrett/Dyer
10:15 AM	Break	All
10:30 AM	QA Status and Progress - CAR Status and Audit Update - Metrics	Clark
10:45 AM	Yucca Mountain Project Status Design Update Status of SR/LA Integrated Schedule and PMR/AMR Development	DOE
11:15 AM	Summary Remarks (from April 25-26 Technical Exchange)	NRC/DOE
11:30 AM	Closing Remarks	NRC/DOE/
11:45 AM	Adjourn	ALL

ATTACHMENT- 2
LIST OF ATTENDEES

ATTENDANCE LIST
DOE/NRC Quarterly Management Meeting
~~April 26, 2000~~ APRIL 27, 2000
Las Vegas, Nevada

Name	Organization	Phone	E-Mail
MANNY COMAR	NRC	301-415-6074	MMCI@NRC.GOV.
Carol Haulen	DOE	702-794-1324	
TIM GUNTER	DOE	702-794-1343	timothy-gunter@ymp.gov
Alan Brownstein	DOE	202-586-4973	
Heidi Zorn	DOE	202-586-4973	Heidi_Zorn@ymp.gov
Bob Clark	DOE	702-794-5583	Bob_Clark@ymp.gov
Russ Dyer	DOE	702-794-1300	russ-dyer@ymp.gov
Lake Barrett	DOE	202-586-6250	
DON BECKMAN	M&O/R&L	702-295-4392	DONALD - BECKMAN @ymp.gov
Jean Yunker	M&O ART	702 295 5497	Jean-Yunker@ymp.gov
George E. Diels	CM/M&O	702-295-2936	george-diels@ymp.gov
Steven P. Kraft	NET	202-739-8226	spk@NET.org
Dan Wilkins	M&O/WM&RF	702-295-5143	daniel-wilkins@ymp.gov
WESLEY PATRICK	GNWRA/NRC	210-522-5158	wpatrick@swri.org
Bob Gamble	MTS/BAH	702-794-1440	rbout-gamble@ymp.gov
RAM MURPHY	DOE	702-794-5549	RAM - MURPHY, @ymp.gov
Ken Asher	M&O R&L	702-295-5563	Ken-Asher@ymp.gov
Susan Zimmerman	State of Nevada	775-687-3744	szccc@gmail.com, state.nv.us
Judy Treichel	NV NWTF	702-248-1127	judy+tf@anv.net
Steve Fishman	NV NWPO	775-687-3744	ssfere@gmail.com, state.nv.us
Jim SALDARINI	RAYTRON	609-720-3220	JIM - SALDARINI@RAYTRON.com
Judith A. SHANKLE	MC	(775) 945-2485	mineral@cem.hawthorne.nv.us
ABE VAN LUIK	DOE	702 794 1424	abe.vanluik@ymp.gov
PAUL HARRINGTON	DOE	702-794-5415	paul-harrington@ymp.gov
Jim Linhart	NSNFP	702-295-0366	james-linhart@ymp.gov
ABNAI MINSWALLA	M&O/SED	702-295-3965	Hanni_Minswalla@ymp.gov

DOE/NRC Ingot Mtg

April 27, 2000

<u>Name</u>	<u>Organization</u>	<u>Phone #</u>
Chris Einberg	RW-52, DOE/HA	(202) 586-8869
Tim Sussman	AT-7	202-574-2101
Jim Curtis	Winstan & Strou	(202) 371-5751
Jim York	Booz Allen & Hamilton	202 626 1047
John Forness	Booz Allen	202 626 1041
Ray Wallace	USGS/MQ	202-586-1244
Steve Hanauer	DOE/HA	202-586-3547
Walter Kears	DOE/INSCD	202-586-1253
Amrita Capoor	DOE/HA	202-586-8735

Location: DOE HQ

ATTACHMENT-3
SET OF BRIEFING MATERIALS



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

Status of Major Project Initiatives

Presented to:

DOE / NRC Quarterly Management Meeting

Presented by:

**Dr. J. Russell Dyer, Project Manager
Yucca Mountain Site Characterization Office**

April 27, 2000

**YUCCA
MOUNTAIN
PROJECT**

Overview

- **Focus for Remainder of Calendar Year 2000**
- **Status of Data and Software Qualification**
- **Classification of Systems, Structures, and Components (SSCs) and Application to Preclosure Design**
 - **QA Classification and Grading Process Status**
 - **Status of Preclosure Surface Facility Design for SRCR**
 - **Ongoing Design Activities**
- **Path Forward**

Focus for Remainder of Calendar Year 2000

Focus for Remainder of Calendar Year 2000

- **Complete Site Recommendation Consideration Report (SRCR) and supporting technical basis documents**
- **Continue quality initiatives and data and software qualification process**
- **Continue interactions with NRC on technical basis for Site Recommendation (SR) and resolution of Key Technical Issues for License Application (LA)**
- **Complete rulemaking process on proposed site suitability guidelines (10 CFR Part 963)**
- **Continue evolution of design basis for SR**

Focus for Remainder of Calendar Year 2000

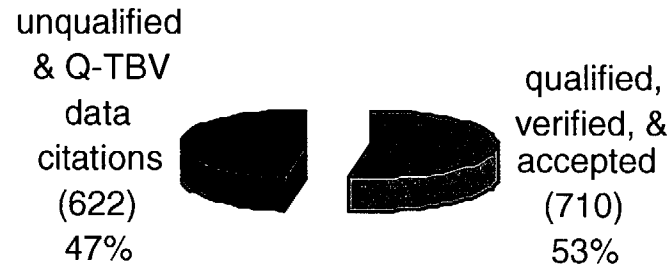
(Continued)

- **Continue preparation of the Environmental Impact Statement and the Comment Response Document**
- **Continue testing and analyses to address key uncertainties for LA**

Status of Data and Software Qualification

Data Qualification Status

Data Citations* Qualified as of 4/19/00
total scope = 1332 citations

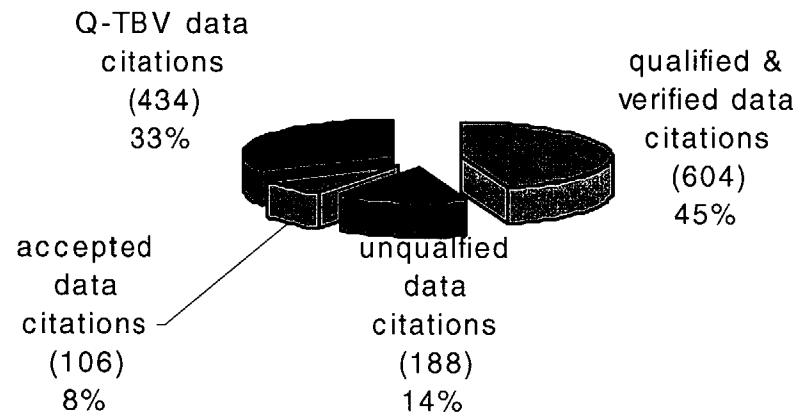


Note: Accepted data may not have a DTN, so not all data citations can be categorized by DTNs.

Data Qualification Status

(Continued)

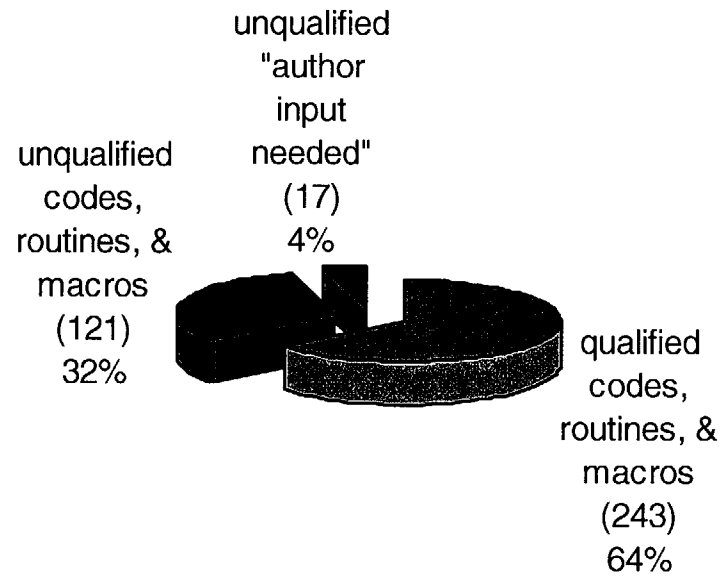
Data Citations Qualified as of 4/19/00
total scope = 1332 citations



Note: qualified = 53%

Software Qualification Status

Status as of 4/19/00 = 64% qualified software

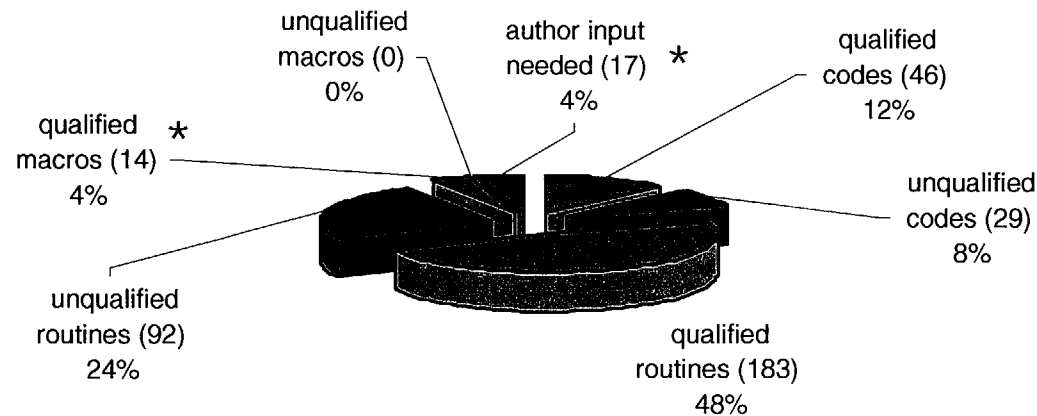


Note: total scope currently includes macros, routines, and pre/post processors

Software Qualification Status

(Continued)

total scope currently includes macros,
routines, and pre/post processors



Note: qualified software = 64%

* Percentages rounded by Excel Program

Status of Data and Software Qualification

19-Apr-00 Total Count Complete To-Go

	Total to Verify	Total Complete %
VL1 DIRS (Verification Checklists)	247	123
VL1 Sources (Verification Checklists)	550	240
VL2 (no verification checklists)	207	207
unqualified DTNs	205	30
Accepted Data (Fact)	70	70
Accepted Data (AMOPE Approval)	49	36
Qualified via PVAR	4	4
Totals	1332	710
% of Total Citations		53%
DIRS VL1+VL2+APSI2Q+Accepted	782	
Source VL1	550	
Total Data Citations	1332	

	Codes Not Qualified	Routines Not Qualified	Macros Not Qualified	Author Input Needed	Total
Software Count	46	29	183	92	14
Software Percent of Total	12.1%	7.6%	48.0%	24.1%	3.7%
Total Qualified Percentage	63.8%				

	Codes Qualified	Codes NOT Qualified	Routines Qualified	Routines NOT Qualified	Macros Qualified	Macros NOT Qualified	Author Input Needed	Total
Software Count	46	29	183	92	14	0	17	381
Software Percent	12.07%	7.61%	48.03%	24.15%	3.67%	0.00%	4.46%	100.00%

46% of the suspect data reverified
53% of data used as direct inputs
63.8% of the software used

Classification of Systems, Structures and Components and Application to Preclosure Design

QA Classification and Grading Process Status

- **Current design and Site Characterization work done under full QA, without grading**
- **Evaluating NRC inputs from March Technical Exchange and incorporating appropriate program and procedure changes to clarify current program**
 - **Project not currently engaged in procurement or construction of safety items**
- **The Project process uses a mix of probabilistic treatments and engineering judgements that meet proposed Part 63 requirements**

QA Classification and Grading Process Status

(continued)

- **Planning future interactions to follow-up with NRC on issues related to development of grading program**
- **Existing YMP QA Classification and Grading Program is adequate for the SR and for LA planning activities**

Status of Preclosure Surface Facility Design for SRCR

- **Current design based on evolution of Viability Assessment, License Application Design Study, and waste stream definition activities**
- **Preclosure safety strategy will be available for SRCR**
- **Conceptual design sufficient for current SRCR needs**

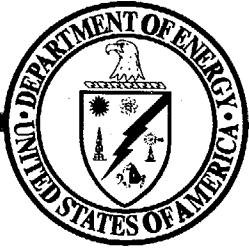
Ongoing Design Activities

- **Engineering studies are being conducted to allow for DOE decisions on**
 - **Onsite SNF storage times/capacity needs**
 - **Dry vs. wet handling and storage methods**
 - **Waste Package sealing and handling design features**
- **Detailed design schedule and planning development for Fiscal Year 2001 for LA in progress**

Path Forward

Path Forward

- **On schedule to complete and release the SRCR and supporting technical basis in late 2000**
- **8 of 9 PMRs have been delivered to DOE for review**
 - **Will be available to the NRC for its sufficiency review after DOE acceptance**
- **Project has made substantial progress toward data and software qualification**
- **Level of detail for SSCs for preclosure design will be adequate for SR, but additional development will be necessary and completed by LA**



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

QA Status and Progress

Presented to:

DOE / NRC Quarterly Management Meeting

Presented by:

Bob Clark, Director

Office of Quality Assurance

Office of Civilian Radioactive Waste Management

April 27, 2000

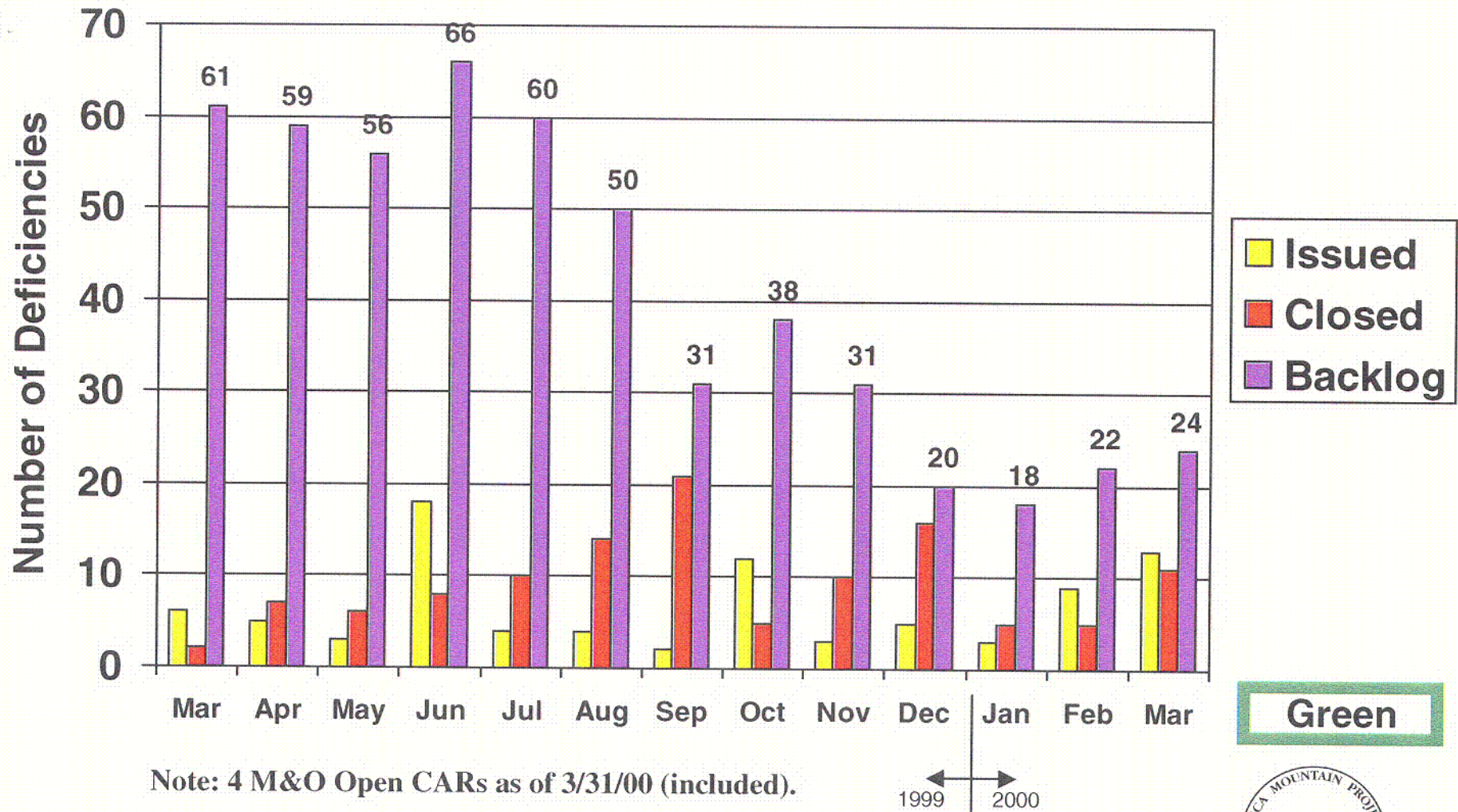
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QA Status and Progress

- **Metrics**
- **CAR Status and Audit Progress**

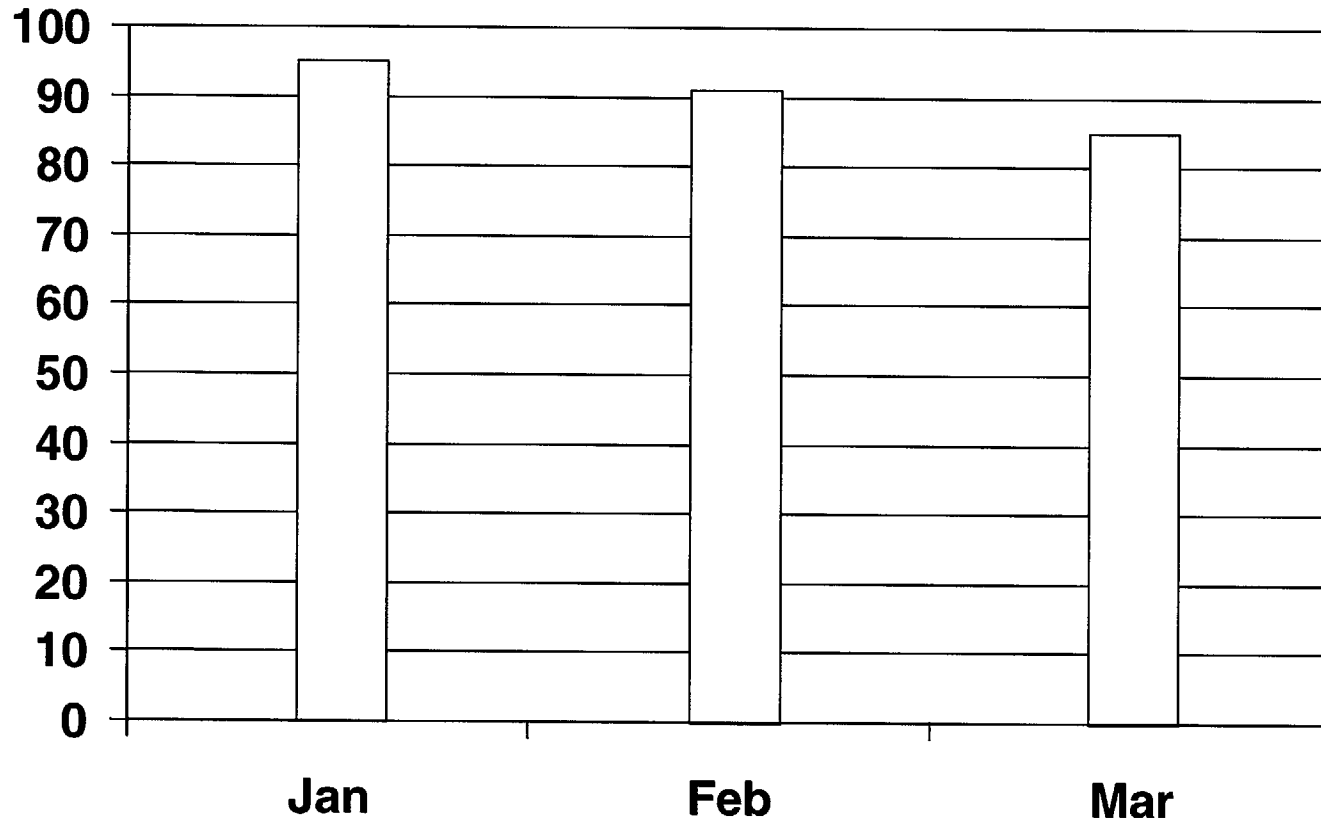
Backlog of M&O Deficiencies (Monthly Activity)



Green

CI

Percent of FY00 Deficiencies Closed Within 100 Days (By Month)



Audit Results

- **PMR-related audits were performed during the first half of fiscal year 2000**
 - **Audit scope:**
 - ♦ **audits were designed to evaluate the effectiveness of the implementation of the CAR corrective actions**
 - ♦ **audits were also intended to provide feedback on the quality of the AMR/PMR development process and the technical adequacy of the AMR documents**

Audit Results

(continued)

- **Audits indicated improvement in the controls necessary to correct past deficiencies in the areas of:**
 - Traceability
 - Technical data
 - Model development and use
- **Improvement needed in implementation of software procedure**
- **Products were very preliminary, which led to numerous technical recommendations that otherwise may not have been made**

CAR Status

- **CAR LVMO-98-C-002 (Data Defensibility)**
 - **Verification of corrective actions was performed**
 - ◆ **Documentation related to data confirmation checklist and roadmaps -- found to be effective**
 - ◆ **Controls in place for classification/grading of data -- determined to be adequate**
 - ◆ **Procedure for qualification of unqualified data -- found to be effectively implemented**
- **CAR LVMO-98-C-002 has been closed**

CAR Status

(continued)

- **CAR LVMO-98-C-006 (Software Control)**
 - Progress has been made; several of the committed to corrective actions were verified by OQA as complete; however, implementation problems with the new procedure continue to exist
 - A new CAR (LVMO-00-C-001) was issued -- limited to ineffective corrective action relative to implementation issues
 - ◆ Four deficiency reports (DRs) issued
 - » software configuration management
 - » use of unqualified software
 - » software not initiated for qualification
 - » failure to document use of routines and macros in accordance with procedure
 - Deficiencies are considered implementation issues only

CAR Status

(continued)

- **CAR LVMO-98-C-010 (Models)**
 - Verification of corrective actions was performed
 - Significant progress has been made to establish a program for models and implement the corrective actions
- **CAR LVMO-98-C-010 has been closed**

CAR Status

(continued)

- **CAR LVMO-99-C-001 (Data Traceability/Technical Reviews)**
 - **Verification is in progress**
 - **Program established to address the corrective actions**
 - ◆ **The PVAR process was implemented**
 - ◆ **The checking process was strengthened**
 - ◆ **Independent technical reviews were utilized**
 - ◆ **Data traceability verification was performed during the review**
 - **Based on results of the initial AMR/PMR audits, the completed corrective actions have enhanced the AMR/PMR process and are being implemented effectively**
 - ◆ **One action remaining - procedure revision (underway)**

RESCHEDULED DOE OQA Audits:

JUNE

M&O

Saturated Zone Flow and Transport PMR

M&O-ARP-00-10

Scheduled for 06/26-30/00

JULY

M&O

Total System Performance Assessment

M&O-ARP-00-13

Scheduled for 07/10-21/00

M&O

Near Field Environment PRM

M&O-ARP-00-08

Scheduled for 07/24-28/00

AUGUST

M&O

Disruptive Events PMR

M&O-ARP-00-07

Scheduled for 08/21-25/00



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

Site Recommendation Status

Presented to:

DOE / NRC Quarterly Management Meeting

Presented by:

**Stephan J. Brocoum, Assistant Manager
Office of Licensing and Regulatory Compliance
Yucca Mountain Site Characterization Office**

April 27, 2000

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Overview

- **Design Update**
- **SRCR Status**
- **Feedback on NRC Presentation to ACNW
Regarding NRC Approach for Sufficiency Review**
- **Upcoming Interactions**
- **EIS Process and Path Forward**
- **Summary**

Design Update

Design Update

Evolution of Repository Design for SRCR

- **Design continues to evolve**
 - Higher thermal output for commercial SNF prompted removal of backfill from base case
 - Other relatively minor modifications to the waste package and repository subsurface layout are under consideration
- **Current design concept offers operational flexibility**
 - Can be operated above boiling after repository closure
 - Can be operated below boiling after closure, with adjustments to operational modes
 - Operational variables include staging of waste before emplacement, waste package spacing and ventilation duration

Design Update

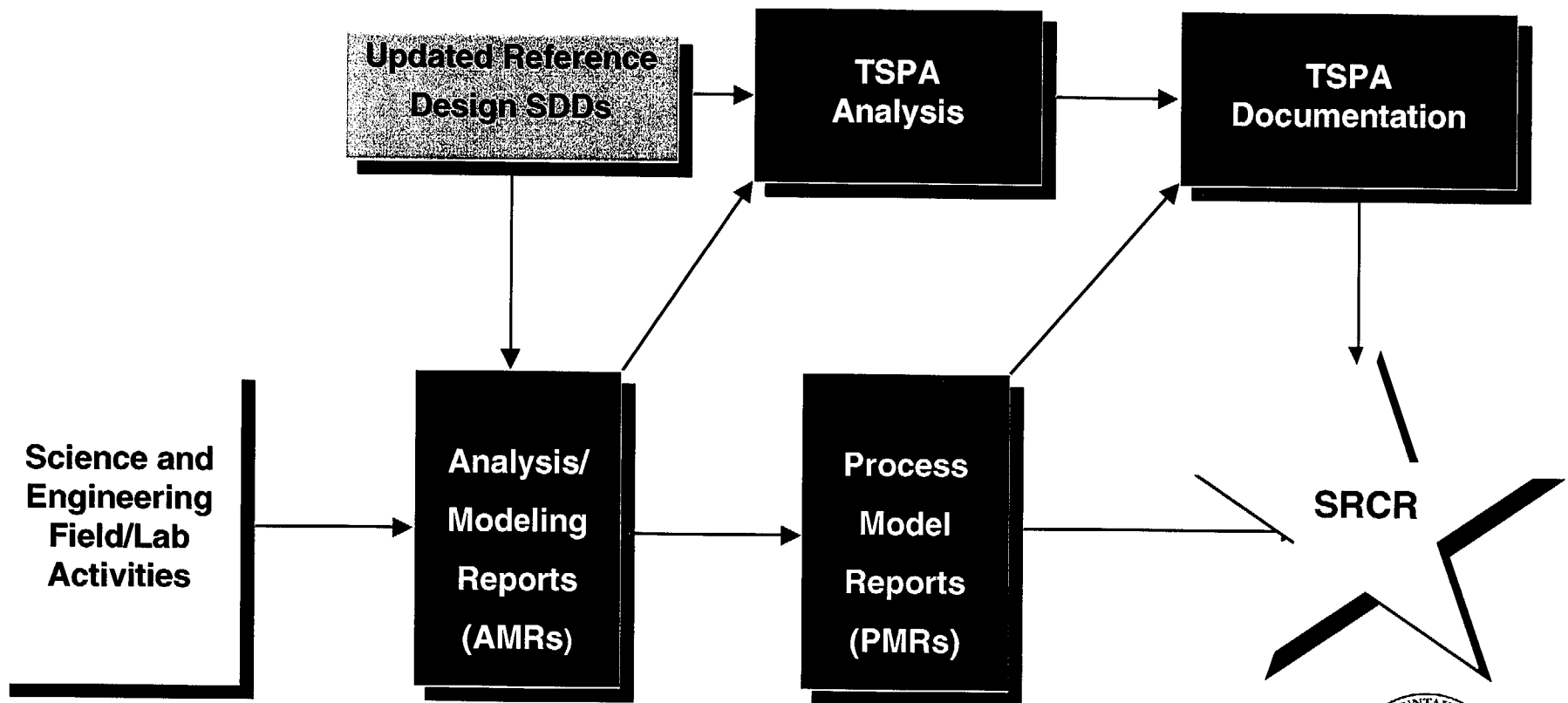
Incorporation of Design Features in TSPA-SR

- **TSPA-SR will incorporate the no-backfill design in the base case analyses**
 - Performance with backfill as design option will be examined through sensitivity studies
- **TSPA-SR will address an above-boiling operational mode as the base case**
 - Sensitivity analyses will address the below-boiling operational mode

SRCR Status

SRCR Status

Analyses and Documentation for the Site Recommendation Consideration Report



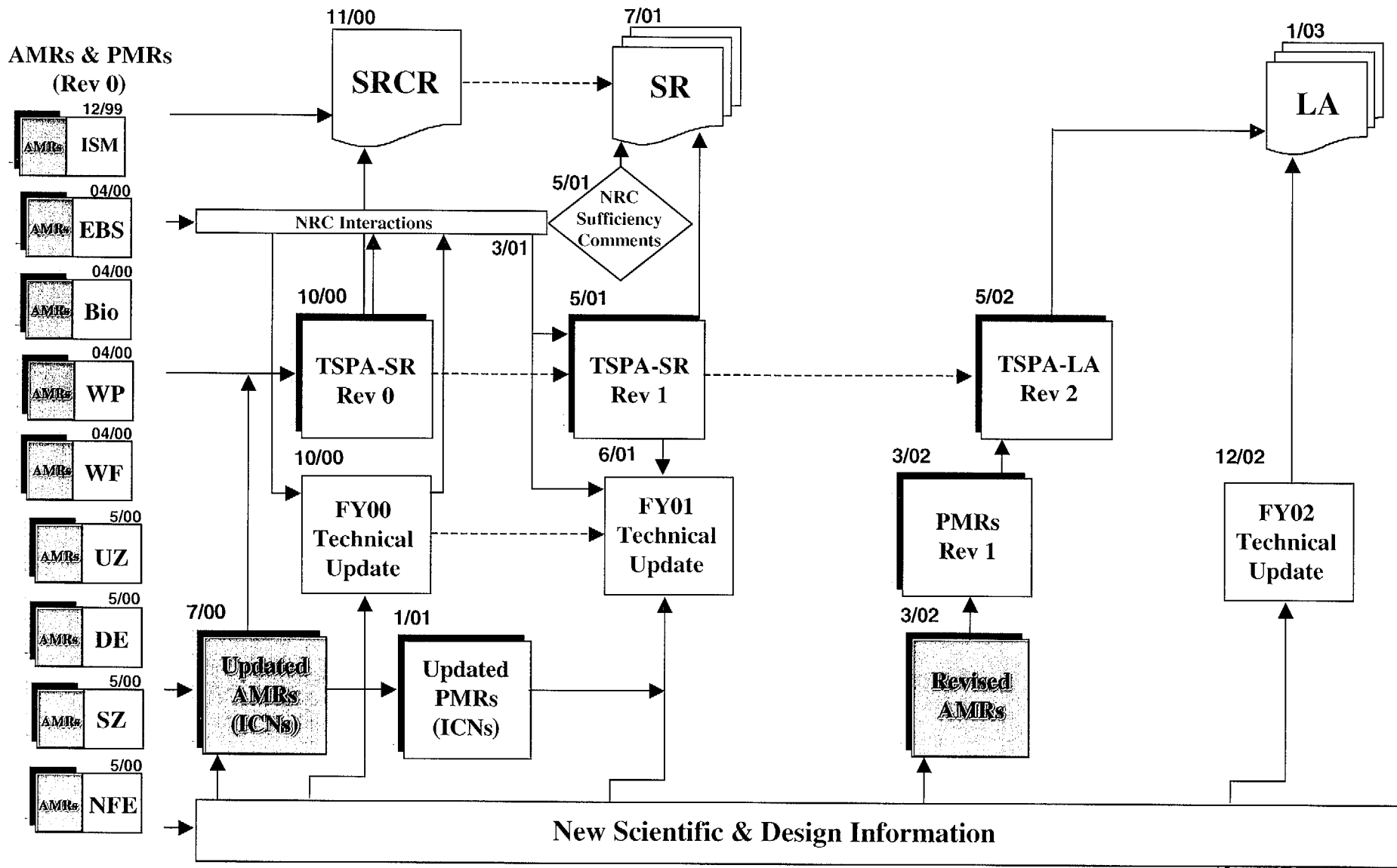
SRCR Status

Revised Approach to Updating Technical Basis for SRCR

- **Rev 0 AMRs and PMRs will be updated through interim change notices (ICNs) to reflect new data and analyses, and design evolution**
 - **If substantial changes are made in supporting AMRs that affect TSPA-SR results, affected Rev 0 PMRs may be revised for SR**
- **DOE will prepare Technical Update reports to accompany the SRCR and SR**
 - **Technical Update reports will provide access to the most current information and an assessment of its relevance to the technical basis for SRCR and SR**
- **PMRs and AMRs will be revised as necessary to support the LA**

SRCR Status

Technical Basis Documents



SRCR Status

- **Rev 0 PMR status**
 - 1 PMR (Integrated Site Model) is complete
 - 2 PMRs have been accepted by DOE with conditions
 - 5 PMRs are in DOE review
 - 1 PMR (Disruptive Events) is scheduled for delivery to DOE by the end of April 2000
- **Rev 0 AMR status**
 - 102 of 121 Rev 0 AMRs are complete as of April 26, 2000
 - 26 AMRs will be updated through ICNs to reflect design evolution and provide traceability for TSPA-SR Rev 0; one new AMR will be developed to reflect design evolution

SRCR Status

(continued)

- **TSPA-SR Rev 0 to be released October 2000**
 - TSPA-SR Rev 0 will be updated for SR to reflect any changes to supporting AMRs and assure consistency with the technical basis for SR
 - Another iteration of TSPA is planned for LA
- **System Description Documents (SDDs) for SRCR are scheduled to be completed in June 2000**
 - SDDs will be updated and expanded to incorporate greater design detail and additional engineering analyses for the LA
 - Additional SDDs will be developed to support the LA
- **The SRCR is scheduled for public release in late 2000**

SRCR Status

RSS Status and Path Forward

- **RSS Rev 3 completed January 2000 and transmitted to NRC February 3, 2000**
 - Based on preliminary analyses using VA models and enhanced design concept (including backfill) selected in September 1999
 - 7 of 27 factors relevant to postclosure safety case classified as principal factors for waste isolation performance
- **A process is now underway to verify the factors for the design concept as it has evolved, update them as necessary, and finalize the principal factors for the postclosure safety case**
- **Rev 4 of the RSS will provide the technical basis for selecting the principal factors for the postclosure safety case**

SRCR Status

RSS Status and Path Forward (continued)

- **The documented basis for the postclosure safety case presented in RSS Rev 4 should:**
 - **Provide an understanding of the relative importance of the NRC's KTI sub-issues in the context of the principal factors**
 - **Facilitate resolution of KTI sub-issues related to non-principal factors**
 - **Provide a basis to focus DOE-NRC interactions on factors most important to postclosure performance**

Feedback on NRC Presentation to ACNW Regarding NRC Approach for Sufficiency Review

DOE Understanding of NRC Approach

- **NRC's sufficiency review will result in a report on DOE progress toward sufficiency of data, design, and analyses for LA; it is not a licensing review**
- **In its review, NRC will:**
 - **Consider both current information and DOE's plans**
 - **Focus on the foundations for the safety case and performance estimates (i.e., data and models)**
 - **Consider the status of KTI resolution**
 - **Assess DOE progress toward qualifying data and codes, and validating models for use in licensing**
- **Sufficiency will be evaluated in context of NRC's risk-informed, performance-based approach to licensing**

DOE Understanding of NRC Approach

(Continued)

- **NRC will provide preliminary comments on:**
 - **Where data and analyses appear sufficient/insufficient**
 - **What additional data or analyses are needed and when they are needed**
 - **Whether conceptual models are supported**
 - **Status of DOE's QA efforts (data, software, models)**
- **NRC will not take a position on DOE's dose calculation or evaluate compliance with 10 CFR Part 963**
- **NRC/DOE prelicensing consultations will continue and focus on issue resolution**

DOE Comments on NRC Approach

- **The technical documents supporting the SRCR provide the information necessary for NRC to complete its sufficiency review and meet the intent of the NWPA**
 - **Consistent with process proposed in DOE letter of November 24, 1999**
- **NRC comments on the need for additional data or analyses will be considered by DOE in its planning for LA**
- **DOE efforts to qualify data and software, and validate models focus on completion for LA**

DOE Comments on NRC Approach

(continued)

- **The Yucca Mountain Review Plan establishes the basis for NRC review of the LA; its role in NRC's sufficiency review is not clear**
- **DOE will continue to interact with NRC to:**
 - **Understand the role of KTIs in the sufficiency review**
 - **Provide an understanding of the relative importance of KTIs in the context of DOE's postclosure safety case**
- **DOE recognizes that NRC must have adequate confidence to make a "preliminary" assessment that the technical basis for SRCR and the work to be completed prior to LA submittal "seems to be sufficient for inclusion in" a LA**

Upcoming Interactions

Upcoming Interactions

- **DOE (November 24, 1999 letter) proposed a series of interactions to discuss information contained in the technical documents supporting SRCR**
 - Focus would be on topics or issues identified by NRC as important to completing its sufficiency comments
 - Provides opportunity to respond to NRC questions or comments
- **Three DOE-NRC interactions planned through June 2000 are responsive to the DOE's proposal:**
 - Appendix 7 meeting on UZ Flow and Transport PMR
 - Appendix 7 meeting on Disruptive Events PMR
 - Technical Exchange on TSPA-SR

Upcoming Interactions

(continued)

- **Additional interactions on the technical basis documents for SRCR will be proposed as the documents become available**
- **Other interactions planned through June 2000 deal with topics related to licensing, including:**
 - **DOE's Approach to Performance Confirmation**
 - **DOE's Pre-closure Safety Methodology and Level of Design Detail for LA**
 - **NRC's Yucca Mountain Review Plan and DOE's Technical Guidance Document for LA Preparation**
- **Further interactions on licensing issues will be considered as appropriate**

Upcoming Interactions

Date	Interaction	Topic	Objective	Location	YMP Contact	M&O Contact
Management Related Issues						
04/25-26/00	Technical Exchange	KTI Approach, Timing for Resolution, and Role in Sufficiency Findings	Establish path forward to resolve KTIs and open issues at SR and to make sufficiency findings.	Las Vegas, NV	Carol Hanlon 4-1324	Mike Scott 5-3016
04/27/00	Management Meeting	Quarterly Management Meeting	Resolve management issues, describe progress in program, discuss management concerns.	Las Vegas, NV	Carol Hanlon 4-1324	Ken Ashe 5-5563 Don Beckman 5-4392
05/31/00	Appendix 7	ISA Level of Design Detail Meeting/Pre-Closure Safety Methodology	Describe approach and establish adequacy of pre-closure safety methodology and LA level of detail.	Las Vegas, NV	Paul Harrington 4-5415 Dave Haught 4-5474	Jack Bess 5-5352
06/20/00	Appendix 7	YM Review Plan & TGD Resolution	Reconcile and reach agreement between parties on TGD and YMRP approach to LA Organization.	Las Vegas, NV	Carol Hanlon 4-1324	Ken Ashe 5-5563
Complete	Technical Exchange	Q Classification Meeting	Demonstrate QA Classification and Grading Program compliance with regulations (including review of prior interactions with NRC).	Rockville, MD	Tim Gunter 4-1343	Ken Ashe 5-5563
November 24 Sufficiency Approach Letter						
05/11-12/00	Appendix 7	UZ Flow and Transport PMR	Explain the Process Model Report, its assumptions, and the model inputs for the TSPA. Identify concerns with implementing the process described. (Exact date to be determined based on document availability date to NRC.)	Berkley, CA	Russ Patterson 4-5469	Martha Pendleton 5-4398
05/22-23/00	Appendix 7	Disruptive Events PMR - Seismic and Igneous Activity	Explain the Process Model Report, its assumptions, and the model inputs for the TSPA. Identify concerns with implementing the process described. Describe DOE's consequence analyses for igneous activity and how they will be incorporated in TSPA. Get feedback on approach.	Las Vegas, NV	Tim Sullivan 4-5589	Terry Crump 5-7476
06/06-07/00	Technical Exchange	TSPA - SR including Methods/Assumptions	Demonstrate progress on TSPA-SR, focusing on changes from TSPA-VA, and emphasizing design and SZ subsystem model changes. Explain assumptions and methods planned for use in TSPA-SR; obtain NRC feedback on approach; establish level of information necessary	San Antonio, TX	Mark Tynan 4-5457	Pete Gaillard 5-5342
Other Meetings						
Complete	Technical Exchange	Criticality Topical	NRC Meeting with public to discuss their Safety Evaluation Report on DOE's disposal criticality topical report.	Rockville, MD	Paige Russell 4-1315	Mike Scott 5-3016
July/2000 (tentative)	Appendix 7	Performance Confirmation Plan	Describe YMP strategy for implementing the Performance Confirmation Plan and obtain NRC feedback.	Las Vegas, NV	Deborah Barr 4-1479	Doug Franks 5-5339



EIS Process and Path Forward

EIS Process

Status of Public Comments

- **Approximately 2288 written documents and hearing transcripts received**
- **To date, 10,640 comments identified in 27 categories**
- **Comment Breakdown**
 - **15% Alternatives**
 - **25% Transportation**
 - **17% NEPA process**
 - **43% Other**
- **Comments will be addressed and appropriate changes incorporated in the final EIS**
- **A Comment Response Document will also be a part of the final EIS**

EIS Process and Path Forward

- **The SR is scheduled to be completed in July 2001**
- **The Nuclear Waste Policy Act requires that the final EIS accompany the SR**

Summary

- **Primary focus for the remainder of CY 2000 is completion of the SRCR and its technical basis**
- **The SRCR technical basis will be made available to NRC as it is completed and accepted by DOE**
 - **NRC will be advised of any subsequent updates to the technical basis**
- **Future NRC/DOE interactions will focus on the technical basis for a possible site recommendation and providing information to NRC for use in the development of sufficiency comments**