



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

TSPA-SR Issues Management Plan

Presented to:

DOE/NRC Quarterly QA Meeting

Presented by:

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**YUCCA
MOUNTAIN
PROJECT**

2001/06/13 - 7.1

Introduction

- **Recent Quality Concerns**
 - **2 CARs**
 - ◆ **Model Validation**
 - ◆ **Software**
 - **TSPA-SR Quality Concerns**
 - ◆ **NRC Telecons (May 4 and 9, 2001)**
 - ◆ **NRC Letter (May 17, 2001)**

Systematic Continuing Issues

- **February 12, 2001 - BSC Assumed Prime Contractor Role on YMP**
- **Evidence of Continuing Quality Problems**
- **Initiated Management Plan to Correct Quality Problems**

Quality Initiative Issues

- **Document Integrity**
 - **Quality and traceability of documents and analytical models that will be subject to the public process**
- **Root Cause Determination (2 CARs)**
 - **Root cause assessment and action plan for**
 - ◆ **Model Validation**
 - ◆ **Software Verification**

Chronology

- **5/4-17/2001 - Identification of errors by NRC and subsequent telephone calls / correspondence with NRC**
- **5/18/2001 - BSC Board Meeting**
- **5/22/2001 - Bechtel mobilizes executive management team**
- **5/29/2001 - Bechtel mobilizes senior project management team from Oak Ridge and Denver to finalize action plan**
- **6/4/2001 - Bechtel executive management approves Quality Initiative action plan**
- **6/4/2001 - Mobilization to support plan**

Quality Initiative Goals

- **Assure the quality/sustainability of technical reports/analyses supporting the YMP work**
- **Establish process improvements to improve project performance for continuing phases of work**

Overview

- **Systematic Approach**
- **Regular Reporting on Progress and Results**
- **Immediate Corrective Actions**
- **Short Term Corrective Actions**
- **Longer Term Corrective Actions (Based on Quality Initiative Investigations)**
- **Highly Experienced Diverse Team**

Action Plan Scope

- **Immediate/Short Term Actions**
- **Short Term (through end of FY01)**
 - **Document Integrity**
 - **Management Stand-Down on Software Development**
 - **Root Cause Assessments**
- **Long Term and Ongoing Actions**
 - **Process Improvements**
 - **Responsibility/Accountability**

Document Integrity Strategy

- **Horizontal review across key documents**
 - assure consistency of inputs and conclusions
- **Vertical reviews of the SSPA documents and supporting analysis (both volumes)**
 - assure consistency and traceability
- **Vertical review of TSPA Rev. 0, ICN 1**
 - assure traceability, consistency, linkage to supporting models

Document Integrity Strategy

- **Horizontal Reviews**

- **DEIS Supplement, S&ER, SSPA Volumes 1 & 2, and TSPA Rev. 0, ICN 1**
- **Ensure consistency of technical inputs and conclusions**
- **DEIS Supplement and S&ER will be pace setting documents since they are already issued**
- **Duration:**
 - ◆ **3 weeks review**
 - ◆ **1 week comment incorporation**

Document Integrity Strategy

- **Vertical reviews of the SSPA documents and supporting analysis**
 - **Assure consistency and traceability**
 - **Each volume**
 - ◆ **Staggered Overlapping Reviews**
 - ◆ **Duration:**
 - » **2 weeks review**
 - » **1 week comment resolution**

Document Integrity Approach

- **Prepare review guidance checklists**
 - Reference checks
 - Consistency checks
 - Traceability checks
 - Error checks
 - Input and output checks
- **Identify bins for collecting daily review results for management review**

Document Integrity Management

- **Weekly Review of Results**
- **Upon Completion of Horizontal and Vertical Reviews: Management Will Assess Need for Further Action**

Document Integrity Strategy

- **Vertical review of TSPA Rev. 0, ICN 1**
 - **assure traceability, linkage to supporting models, and to identify errors**
 - **Duration:**
 - ◆ **4 weeks review**
 - ◆ **3 weeks comment resolution**

Quality Initiative

Results of Initial Investigation

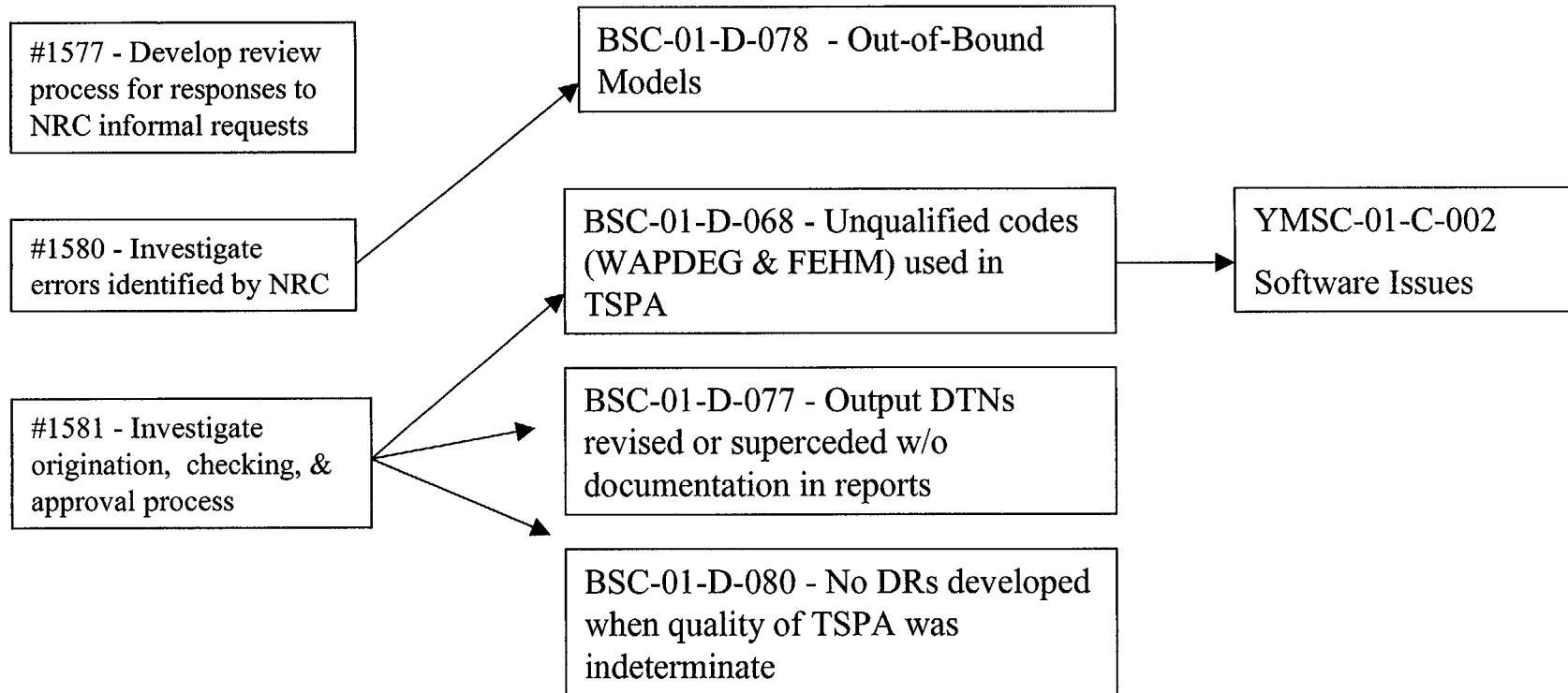
- **Programmatic/Process Issues**
 - 4 Deficiency Reports
 - 3 CIRS Items
- **Technical Issues**
 - were mostly known to technical personnel
 - further assessments still in progress
 - all assessed to date have minimal or no impact

TSPA-SR Rev. 0, ICN 1

CIRS

DRs

CAR



Corrective Action Requests

- **Institute Immediate Actions**
- **Conduct Root Cause Determinations**
 - **Model Validation (May 3, 2001)**
 - **Software Verification (June 2001)**

Corrective Action Requests

- **Initial Immediate Actions**
 - **BSC Management stand-down to control the further development of software (June 7, 2001)**
 - **Initiated teams to begin model validation and software verification actions immediately**
 - **Initiated formal root cause analysis in compliance with procedural requirements (June 4, 2001)**
 - **General Manager Meeting to Emphasize Expectations (June 11, 2001)**

Corrective Action Requests

- **Formal Root Cause Analyses**
 - **Single Team Will Conduct Both Root Cause Analyses to Ensure Integration of Common Causes**
 - ◆ **Model Validation**
 - ◆ **Software Verification**
 - **Utilize Tap Root Process (Mandated by Project Procedures)**

Corrective Action Requests

- **Root Cause Assessments**
 - **Team Composition**
 - ◆ **Team Leader**
 - ◆ **Technical Experts and Independent Outside Consultants**
 - ◆ **Project Liaison**
 - ◆ **Administrative Support**

Corrective Action Requests

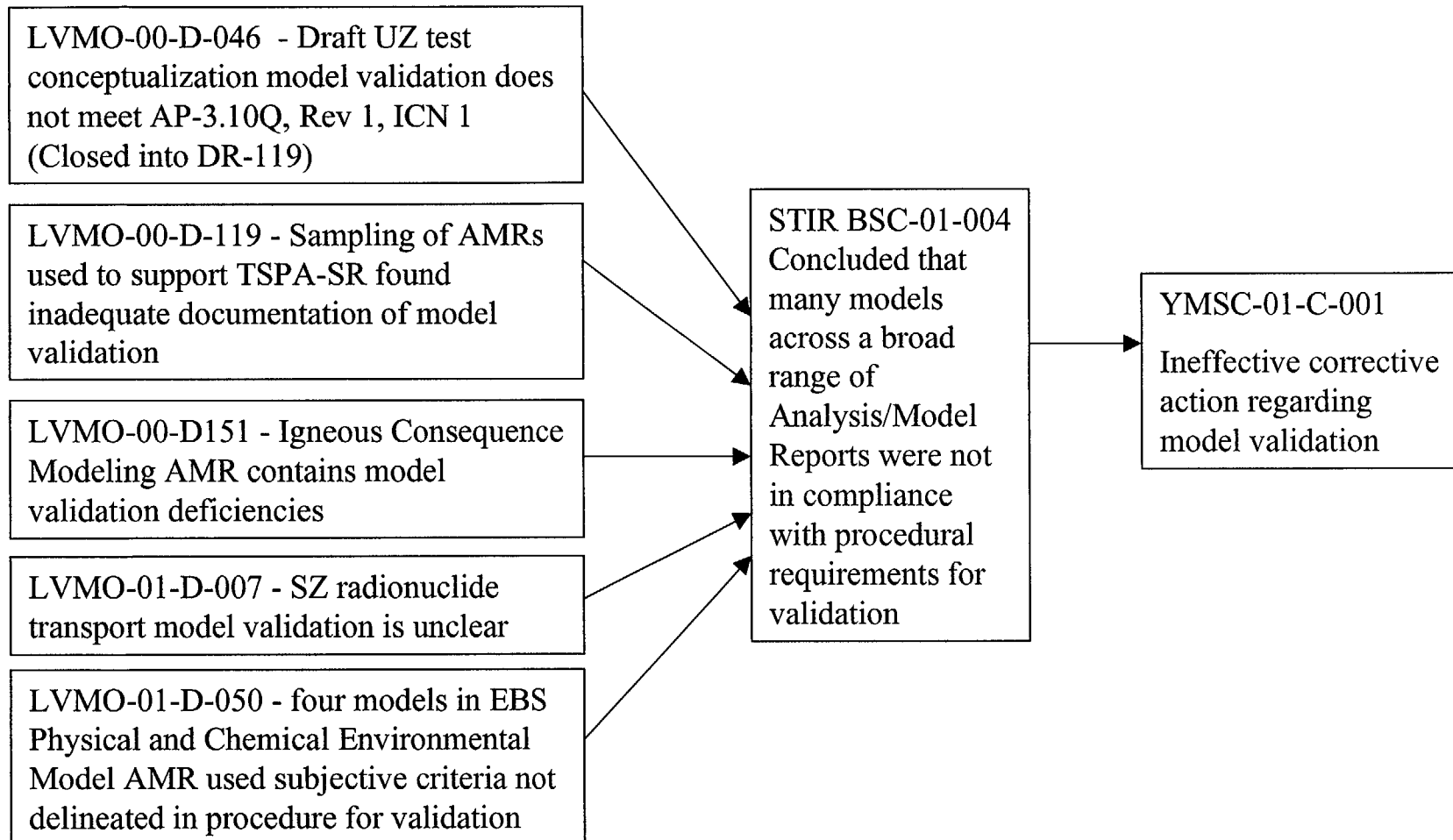
- **Immediate Actions: Model Review**
 - **Initiate a review of the existing models that lack compliant validation and document the results of the review**
 - **Review will categorize:**
 - ◆ **adequate confidence for intended use in SR but requiring further documentation prior to LA**
 - ◆ **inadequate confidence in the use of the model for SR requiring immediate impact assessment or further validation**

Model Validation

DRs

STIR

CAR



Corrective Action Requests

- **Immediate Actions: Software**
 - **Software Review**
 - ◆ **Review existing software and prepare appropriate verification documentation**
 - ◆ **Initiate revisions to the software procedures to provide appropriate requirements and controls for software development and configuration control**

Longer Term Actions

- **Procedure Revisions/Enhancements**
- **Baseline Management/Controls**
- **Corrective Actions Identified by Root Cause Determination**

Impact of Unqualified Data and Software

- **Compile unqualified/TBV inventory**
- **Identify information not needing qualification**
- **Conduct vertical trace from source to TSPA-SR input parameter**
- **Determine significance to TSPA-SR input parameter and results**
- **Prepare documentation of findings**
- **Prepare summary of conclusions**
- **Review prior to release**