OPEN ITEM TRACKING SYSTEM
FINAL REPORT

Division of Waste Management

Office of Nuclear Material Safety and Safeguards

U.S. Nuclear Regulatory Commission

July 30, 2002

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INTRODUCTION TO THE OPEN ITEM TRACKING SYSTEM REPORT

The Open Item Tracking System (OITS) was created to track the closure of comments and questions raised to DOE by NRC staff on certain Yucca Mountain Project activities. OITS contain 357 items from four sources, NRC staff's Site Characterization Analysis (SCA) ["NRC Staff Site Characterization Analysis of the Department of Energy's Site Characterization Plan, Yucca Mountain Site, Nevada," NUREG-1347, 1989], comments from NRC reviews of DOE's 1990-1995 Study Plans (SP), NRC reviews of DOE's Annotated Outline (AO) of the License Application (April 1992- Nov. 1993), and NRC evaluation of DOE's Quality Assurance (QA) program through 1995. The last open item entry to the system was made in November 1995.

In 1995, the NRC started using 9 Key Technical Issues (KTIs) and associated Resolution Status Reports (IRSRs) to track NRC post-closure issues related to Yucca Mountain Project. When the KTIs were introduced, it was decided that the OITS would no longer be the vehicle for tacking DOE open items. However, it was considered that as a historical record of how these older open items were disposed of, OITS would be maintained until all the open items could be closed in one of several ways. As explained below, that is now the case. The final OITS showing closure of the open items and the rationales for that status, is contained in the document.

Three bases have been used in closing the open items in OITS: (1) NRC has documented in correspondence to DOE in summaries of publicly held NRC/DOE meetings on the closure of specific open items and the rationale for closure; (2) changes in DOE's repository design, waste package design, site characterization plans and activities, or performance assessment approaches and evaluations, have rendered the original open item irrelevant to the current DOE program; or (3) a few original open items which are still unresolved have been subsumed into NRC/DOE agreements or KTI issues and subissues which are being tracked in a newer tracking system, still under development by the staff. Every open item in the historical OITS has been closed per one of these basis, and the basis is stated in OITS for each closure. The status of each of the open items appearing in OITS has been reported on as well in the periodic Issue Resolution Status Reports (IRSR) issued by the NRC staff. These IRSRs encompass considerable information about the status of each KTI; one component of each IRSR is the status of the open items in OITS.

This document includes the following 10 sections. Sections 1 through 9 track the closure of open items in nine individual KTIs, and Report 10 tracks open items with ownership by more than one KTI(multiple ownership). These sections are as follows:

(1) Total System Performance Assessment and Technical Integration (TSPAI)
(2) Unsaturated and Saturated Flow under Isothermal Conditions (USFIC)
(3) Repository Design & Thermal-Mechanical Effects (RDTME)
(4) Evolution of the Near-Field Environment (ENFE)
(5) Container Life and Source Term (CLST)
(6) Radionuclide Transport (RT)
(7) Thermal Effects on Flow (TEF)
(8) Igneous Activity (IA)
(9) Structural Deformation and Seismicity (SDS)
(10) Multiple Ownership Items

As of this date, the staff has issued two or more revisions of the IRSRs associated with each of the nine KTIs. The sections addressing OITS open items are found in Section 5.0, "Status of Issue Resolution at the Staff Level." This OITS report documents the history of the 357 open items in OITS from their origin to their closure and serves as the final use of OITS as a tracking system in the NRC High-Level Waste Program.

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July 30, 2002

Appendix A OPEN ITEM TRACKING SYSTEM IDENTIFIER

The Nuclear Regulatory Commission (NRC) staff has tracked selected concerns with the U.S. Department of Energy (DOE) high-level waste repository program (questions, comments, and objections) generated from 1989 through 1995 in an Open Item Tracking System (OITS). The identifier for each item (record) is the OITS identifier, abbreviated OITSID in the OITS tables. The OITSID is a 17-character field which is structured as follows:

- The first character contains the character "O" to indicate that this record pertains to an item being tracked by the OITS.

- The next two characters (characters 2-3) indicate the type of source document from which the open item was derived:

  _ AO: NRC reviews of Annotated Outlines of the License Application [April 1992 to Nov.1993]

  _ QA: NRC evaluation of DOE Quality Assurance Program [Oct. 1994 to Nov. 1995]

  _ SC: Site Characterization Analysis (SCA) of DOE Site Characterization Plan (SCP)[Aug. 1989]

  _ SP: NRC reviews of Study Plans [1990 to 1995]

- The next ten characters (characters 4-13) contain a code uniquely identifying open item source.

  _ Examples:

  – - For an item identified in the review of an AO, these ten characters would reflect the date of the AO submission. That is, for an AO submitted on February 13, 1994, these characters would be arranged fin day, month, year format, for example, 013FEB1994.

    - For an item identified in the review of a QA audit, these ten characters reflect the NRC letter or QA audit report publication date by day, month, and year. For an audit report published on May 23, 1995, the ten characters would be 023MAY1995.

    - For an item identified in the SCA, NUREG 1347, these ten characters would be 0000001347.

- For an item identified in the review of SP 8.3.1.17.4.11, these ten characters would be 0083117411.

- The next character (character 14) indicates the category of the item.

  - "C" - Comment

  - "O" - Objection

  - "Q" - Question

- The last three characters (character 15-17)are a numerical identifier for the comment, question, or objection.

  - Examples:

    - For Comment 21 from the SCA, NUREG **1347**, the OITSID would be OSC0000001347C021

    - For Question 2 from the review of **SP 8.3.1.17.4.11**, the OITSID would be O**SP0083117411**Q002

    - For Comment 12 from a review of an *AO* submitted on **October 4, 1993**, the OITSID would be O*AO*004**OCT1993**C012

    - For Comment 1 from review of a **QA** audit, with report published *Dec 19, 1994*, the OITSID would be O**QA***19DEC1994*C001

Rept-OITs for TSPAI

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OAO017APR1992C002	Comment 002	AO 17APR1992	Closed	Misplacement of potential impacts to the accessible environment	This NRC comment on DOE's AO is closed because the AO is no longer followed by DOE as their own guide to prepare LA.
OAO017APR1992C003	Comment 003	AO 17APR1992	Closed	Misplacement of discussion on performance assessments to address 40 CFR 191.13	TSPAI IRSR Rev. 2 Table 18. 40 CFR 191.13 No Longer Applicable to YM
OAO028MAY1993C001	Comment 001	AO 28MAY1993	Closed	PAC's may not be appropriately considered in compliance demonstration with overall perfomance objectives	Closed a documented in TSPAI Rev. 2 Table 18
OAO028MAY1993C002	Comment 002	AO 28MAY1993	Closed	Consideration of present PAC/FACs may be inappropriately restricted to scenario development	Closed as documented in TSPAI IRSR Rev. 2 Table 18 and Discussion in Section 4.3: Model Abstraction.
OAO028MAY1993C003	Comment 003	AO 28MAY1993	Closed	Lack of clear relationships between PAC/FACs identified in Section 6.5 and _WPCHAR_[4,6] 122 PAC/FACs	Closed by rationales discussed in TSPAI IRSR Rev.2 Section 4.3

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OAO030NOV1993C001	Comment 001	AO 30NOV1993	Closed	Repository systems approach of FCRG not followed in LAAO	FCRG no longer used.
OAO030SEP1992C001	Comment 001	AO 30Sept1992	Closed	Possible occurrences of potential disruptive processes and events and effects on post-closure performance	TSPAI IRSR Rev.2, Table 18, subsumed in IIRSR Sections 3.3, 3.3.2, 3.3.10, 4.1-4.2
OAO030SEP1992C002	Comment 002	AO 30Sept1992	Closed	Pre-closure potentially disruptive events used as examples of potential post-closure effects on performance	TSPAI IRSR Rev.2 Table 18, subsumed in IIRSR Section 2.1
OQA019DEC1994C001	Comment 001	QA 19DEC1994	Closed	The use of developer supplied test cases (and no other test cases) to validate the acceptability of procured software that was not developed under a QA program accepted by the user	NRC Memo. K.Chang to N. Stablein, Sept.18,2001
OQA027JAN1995Q001	Question 001	QA 27JAN1995	Closed	Controls specified for keeping scientific notebook type information on electronic media	3/9/95 Letter from J. Holonich (NRC)to R. Milner (DOE)

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C001	Comment 001	SCA	Closed	Incomplete program for Issue Resolution Strategy	Closed as documented in TSPAI IRSR Rev. 2 Table 18, Also tracked in USFIC IRSR Rev 1 pg 23
OSC0000001347C002	Comment 002	SCA	Closed	Deficiencies in performance allocation	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C003	Comment 003	SCA	Closed	Reliance on formal use of expert judgement in place of quantitative analysis may lead to incomplete License Application	TSPAI IRSR Rev. 2 Table18
OSC0000001347C007	Comment 007	SCA	Closed	Clarification of role of subjective methods in site characterization is needed	Subsumed in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C009	Comment 009	SCA	Closed	Lack of criteria for using expert judgement and lack of traceable and defendable procedure for expert judgement elicitation	TSPAI IRSR Rev. 2 Table 18, subsumed in IIRSR Section 5.4 Expert Elicitation

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C022	Comment 022	SCA	Closed	Inadequate saturated zone hydrology sample collection methods	Closed as documented in TSPAI IRSR Rev. 2 Table 18; Also tracked in USFIC, USFIC IRSR rev 1 pg 167
OSC0000001347C034	Comment 034	SCA	Closed	Drilling program description unclear about integration with other studies, use of existing data, and approach for dealing with uncertainties	Data needed in support of studies for site acceptablity are explained in the relevant KTI Agreements and the IIRSR. Adequacy of drilling program will be addressed by NRC's evaluation of program plans and results on a KTI by KTI basis.
OSC0000001347C042	Comment 042	SCA	Closed	No consideration of escarpment retreat in erosion program	Comment is closed by NRC acceptance of DOE's EIS
OSC0000001347C053	Comment 053	SCA	Closed	Natural resources investigations appear inadequate	Comment is closed by NRC acceptance of DOE's EIS
OSC0000001347C054	Comment 054	SCA	Closed	Inconsistencies exist in Section 8.3 (Planned Tests, Anslyses, and Studies), and 8.4 (Planned Site Preparation Activities) of the SCP	Overtaken by changes in test program. Concerns are subsumed in RDTME NRC/DOE Agreement RDTME.3.00

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C076	Comment 076	SCA	Closed	Inappropriate to rely on NRC staff for peer reviews	This item is closed by NRC's stated position that DOE not to include NRC regulatory review as a peer review of DOE material submitted to support licensing.
OSC0000001347C095	Comment 095	SCA	Closed	Underlying logic for, and implementation of, scenario development and screening is deficient for generating a CCDF and deficient for guiding site characterization	TSPAI IRSR rev. 2 Table 18, subsumed in IIRSR Section 3.2
OSC0000001347C098	Comment 098	SCA	Closed	Weighting alternative conceptual models according to judgement they are correct does not provide a conservative estimate of performance	Subsumed in TSPAI IRSR rev. 2 Table 18; SDS IRSR Rev. 2 pg D-1,D-10, also tracked in SDS
OSC0000001347C099	Comment 099	SCA	Closed	Premature limiting of the total system performance consequence analysis may distort performance allocation	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C100	Comment 100	SCA	Closed	Performance Assessment: Adequacy of considerations of faulting release scenarios	Closed as documented in TSPAI IRSR rev 2 Table 18

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C101	Comment 101	SCA	Closed	The equation (8.3.5.13-21) used to estimate the partial performance measure for the jth scenario class involving water pathway releases may be in error	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C102	Comment 102	SCA	Closed	Performance assessment flow models are inconsistent with current understanding of site hydrology	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C103	Comment 103	SCA	Closed	The Ross sequence numbers 59 through 62 and 64 through 69 do not characterize scenarios	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C104	Comment 104	SCA	Closed	Scenario analysis appears to have omitted vitrified high-level waste	TSPAI IRSR rev 2 Table 18
OSC0000001347C105	Comment 105	SCA	Closed	Site characterization should provide data, analyses, or justification to substantiate elimination of scenarios	TSPAI IRSR Rev. 2 Table 18, subsumed in IIRSR Section 3.2

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C107	Comment 107	SCA	Closed	The use of waiting time may preclude accurate representation of clustered phenomena	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C108	Comment 108	SCA	Closed	Concerns about the use of the expected partial performance measure to screen scenarios	Closed as documented inTSPAI IRSR Rev. 2 Table 18
OSC0000001347C110	Comment 110	SCA	Closed	SCP text is unclear as to how human intrusion will be handled	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C111	Comment 111	SCA	Closed	Inconsistencies in total System Performance Section of SCP	Subsumed in TSPAI IRSR, TSPAI IRSR Rev. 2 Table 18
OSC0000001347C112	Comment 112	SCA	Closed	There is a gap in the discussion of the treatment of state variables s constants or as random variables	Subsumed in TSPAI IRSR. TSPAI IRSR Rev. 2 Table 18

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C113	Comment 113	SCA	Closed	Inconsistent definitions of the unit step function and of the CCDF	Closed and documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C114	Comment 114	SCA	Closed	Incorrect use of the term - independent - in place of - mutually exclusive	Subsumed in TSPAI IRSR. TSPAI IRSR Rev. 2 Table 18
OSC0000001347C115	Comment 115	SCA	Closed	Statement that CCDF scenario classes can only be expanded if entities are independent is incorrect	Closed as documented in TSPAI IRSR. TSPAI IRSR Rev. 2 Table 18
OSC0000001347C116	Comment 116	SCA	Closed	Incorrect assumption that absence of significant sources of groundwater sources at site precludes consideration of environmental pathways for individual dose calculations	Closed as documented in TSPAI IRSR Rev. 2 Table 18
OSC0000001347C117	Comment 117	SCA	Closed	Current approach for C14 exposure will not provide the information needed to calculate residence time	Closed as documented in TSPAI IRSR. TSPAI IRSR Rev. 2 Table 18

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C118	Comment 118	SCA	Closed	Performance confirmation should include long-term in situ and laboratory waste package activities	Subsumed in IIRSR. TSPAI IRSR Rev. 2 Table 18 also tracked in CLST IRSR Appendix A, Perf. Conf. Plan Test # PM-02,PM-03,PM-09,PM-10
OSC0000001347C119	Comment 119	SCA	Closed	Discussion of performance confirmation testing program Is insufficient to determine compliance with Part 60 requirements	Comment is moot with the Issuance of Part 63
OSC0000001347C126	Comment 126	SCA	Closed	Items and activities covered by the DOE QA program are incomplete and their identification is nonconservative	Subsumed in YM Project's QA Program after 1995
OSC0000001347O002	Objection 002	SCA	Closed	Concern that activities will begin prior to approval of Quality Assurance Program	DOE has implemented a QA program which satisfies Subpart G of CFR 60 and 63. The position of Director of Office of QA has been continuously filled with a full-time individual who posses the requisite qualifications and experience.
OSC0000001347Q014	Question 014	SCA	Closed	No consideration of historical claims and leases in the evaluation of previous drilling and excavation at YM	This question was asked from the stand point of how the SCP addressed human intrusion related rule [10 CFR 60.121(b)] which is now superseded by Rule 10 CFR 63.121(b).

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q015	Question 015	SCA	Closed	Statements on resource exploration and mineral resource potential are inconsisten and do not consider alternatives	This question is on how YM addresses the potential for mineral resources at the proposed HLW site. This item is subsumed by NRC acceptance of DOE's YM Environmental Impact Statement.
OSC0000001347Q022	Question 022	SCA	Closed	Rationale for selection of performance goals needed for establishing that technologies pertaining to repository construction, operation, closure, and decommissioning are sufficiently mature to resolve performance issues	Subsumed in IIRSR and RDTME IRSR. TSPAI IRSR Rev.2 Table 18; Also tracked in RDTME
OSC0000001347Q023	Question 023	SCA	Closed	Code verification and model validation plans for design analyses addressing impacts of surface conditions, rock characteristics, hydrology, and tectonic activity	Code verification and model validation plans are included in DOE's TSPA-VA (1998). Also tracked in SDS and RDTME
OSC0000001347Q029	Question 029	SCA	Closed	Question the basis to justify that cited results are representative of the conditions at Yucca Mountain	This question is related to YM's sealing test plan. It is closed for the same reason for SCA question 25 (ID OSC0000001347Q025)
OSC0000001347Q048	Question 048	SCA	Closed	Question selection procedures for peer review panel	Subsumed in TSPAI IRSR Rev.2 Table 18; Also documented in CLST IRST Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q063	Question 063	SCA	Closed	Question justification for certifying that all TAR reviewers were not principal contributors	The ESF is completed by DOE. This question is therefore moot.
OSP0000831811C012	Comment 012	SP 831811	Closed	Weighted alternative volcanic models may obsure essential information	IA input only,Resolved 12/26/96
OSP0000831811C013	Comment 013	SP 831811	Closed	Use of expert judgement in magmatic disruption studies inconsistent with SCP	IA input only, Resolved 12/26/96
OSP0000831921C001	Comment 001	SP 831921	Closed	Absense of drill holes which penetrate Paleozoic rocks for Natural Resource studies	Closed, NRC reviewed Study Plan 3/16/93.
OSP0000831921Q001	Question 001	SP 831921	Closed	Selection and sampling of - surrounding areas - for natural resource assessments	Closed, NRC reviewed Study Plan 3/16/93.NRC reviewed Study Plan 3/16/93, had no objections.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831921Q002	Question 002	SP 831921	Closed	Plans for using existing geochemical information in natural resouce studies	Closed, NRC reviewed Study Plan 3/16/93.
OSP0000831921Q003	Question 003	SP 831921	Closed	use of remote sensing imagery in natural resource studies	Closed, NRC reviewed Study Plan 3/16/93.
OSP0000831921Q004	Question 004	SP 831921	Closed	Consideration of effects of extrusive/intrusive ratios outside of 1 to 10 in geothermal modeling for natural resource studies	Closed, NRC reviewed Study Plan 3/16/93.
OSP0000831921Q005	Question 005	SP 831921	Closed	use of comparison areas in natural resource studies	Closed, NRC reviewed Study Plan 3/16/93.
OSP0000831921Q006	Question 006	SP 831921	Closed	Techniques to estimate size and number of deposits for natural resources studies	Closed, NRC reviewed Study Plan 3/16/93.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP00000831921Q007	Question 007	SP 831921	Closed	How will results from natural resource investigations provide input to study 83193 on effects of resource exploitation	Closed, NRC reviewed Study Plan 8.3.1.9.2.1. No study plans to be developed for 8.3.1.9.3

Rept-OITs for USFIC

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C010	Comment 010	SCA	Closed	No technical basis provided for assessments of significance of hydrogeologic features, events and processes to design and performance measures and parameters	USFIC IRSR rev pg 23
OSC0000001347C012	Comment 012	SCA	Closed	Hydrology - Lack of tests to confirm hypothesis related to liquid-water flow in Calico Hills unit	Closed, NRC Ltr 11/2/92
OSC0000001347C013	Comment 013	SCA	Closed	Current surface water (i.e., runoff and streamflow) and meteorological monitoring stations for estimating infiltration in the unsaturated zone is inadequate	Closed, Ltr 7/31/91 Bernero to Barlett
OSC0000001347C014	Comment 014	SCA	Closed	Inadequate in-situ hydrogeological data collection to characterize the northern and central areas of the site	Closed, Ltr 7/31/91 Bernero to Barlett
OSC0000001347C015	Comment 015	SCA	Closed	Solitario Canyon horizontal borehole activity inadequate to address impact of faults on fluid flow	USFIC IRSR rev 1 pg 165

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C016	Comment 016	SCA	Closed	Hydrology - lacking plan to adequately characterize the hydrologic properties of the Calico Hills Unit	Closed, NRC Ltr 11/2/92
OSC0000001347C017	Comment 017	SCA	Closed	Hydrology - No plan for sampling and analyzing pore and fracture fluids from rock core samples included in study	Closed, Ltr 7/31/91 Bernero to Bartlett
OSC0000001347C018	Comment 018	SCA	Closed	Incomplete consideration of features, events and processes (FEP) essential to developing a valid hydrogeologic modeling strategy	USFIC IRSR rev 0 pg 23
OSC0000001347C019	Comment 019	SCA	Closed	Activities for the saturated zone flow system are inadequate to characterize boundaries, flow directions, magnitudes and paths	USFIC IRSR rev 1 pg 166
OSC0000001347C020	Comment 020	SCA	Closed	Current and proposed well locations inadequate or defining the potentiometric surface in the controlled area	USFIC IRSR rev 1 pg 167

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C021	Comment 021	SCA	Closed	No consideration of I129 and Tc99 in characterization of saturated zone hydrochemistry	USFIC IRSR rev 1 pg 167
OSC0000001347C039	Comment 039	SCA	Closed	The systematic drilling program contains no support for the estimated maximum range of statistical correlation for porosity and air permeability (3,000 feet) in the location of the boreholes	Closed 7/31/91 Ltr, Bernero to Bartlett
OSC0000001347C093	Comment 093	SCA	Closed	Theoretically inappropriate method for constructing cumulative distribution curves (CDFs) for groundwater travel time proposed	Closed 7/31/91 Ltr. Bernero to Bartlett
OSC0000001347C094	Comment 094	SCA	Closed	Features, events and processes (FEP) related assumptions required by GWTT's PA have not been adequately identified	Closed 7/31/91 Ltr. Bernero to Bartlett
OSC0000001347C123	Comment 123	SCA	Closed	Impacts of underground ventilation on testing and baseline conditions underestimated and effects of ventilation on isolation not adequately assessed	USFIC IRSR Rev. 1 pg 168

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C125	Comment 125	SCA	Closed	Concerns about qualifying existing data gathered during early site exploration for use in characterization and to support a license application	Closed 7/31/91 Ltr. Bernero to Bartlett
OSC0000001347Q002	Question 002	SCA	Closed	Current understanding of aperture relations, and how will the resultant data be used	Subsumed by I IRSR
OSC0000001347Q060	Question 060	SCA	Closed	Question timing of the exploratory shaft radial borehole tests relative to operations interference	Closed, 7/31/91 Ltr. Bernero to Bartlett
OSP0000831212C001	Comment 001	SP 831212	Closed	Attention to surface water runoff flows from the West Face and Solitario Canyon	USFIC IRSR rev 1 pg 168
OSP0000831212C002	Comment 002	SP 831212	Closed	Caution on use of regionalization procedure to reject or determine probabilities of runoff magnitudes	USFIC IRSR rev 0 pg 24

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831212Q001	Question 001	SP 831212	Closed	DOE must document that field-tests of devices, systems and techniques for surface runoff measurement have been completed	USFIC IRSR rev 0 pg 24
OSP0000831212Q002	Question 002	SP 831212	Closed	Consideration of alternative equipment for in-situ flow depth and velocity	USFIC IRSR rev 0 pg 24
OSP0000831212Q003	Question 003	SP 831212	Closed	Plans for taking sediment samples for debris flow activity	Subsumed by I IRSR, USFIC IRSR rev 0 pg 25
OSP0000831214C001	Comment 001	SP 831214	Closed	Minimum information and documentation needed to support use of pre-existing wells to calibrrate regional models	USFIC IRSR rev 1 pg 169
OSP0000831214C002	Comment 002	SP 831214	Closed	Inadequate approach for modifying exisiting ground water models	USFIC IRSR rev 1 pg 169

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831214C003	Comment 003	SP 831214	Closed	Possible insufficient data to construct and calibrate groundwater models	USFIC IRSR rev 1 pg 170
OSP0000831214Q001	Question 001	SP 831214	Closed	What approaches will be used to evaluate evapotranspirations on a regional basis	USFIC IRSR rev 1 pg 170
OSP0000831228Q001	Question 001	SP 831228	Closed	Laboratory-scale models and data to estimate model parameters for fluid flow studies	USFIC IRSR rev 1 pg 171
OSP0000831228Q002	Question 002	SP 831228	Closed	Rationale for assignment of modeling strategies to technical issues in fluid flow studies	USFIC IRSR rev 1 pg 171
OSP0000831228Q003	Question 003	SP 831228	Closed	Applicability of method used by Cacas et al. (1990) to unsaturated flow	USFIC IRSR rev 1 pg 172

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831228Q004	Question 004	SP 831228	Closed	Problems with building confidence in conceptual models for fluid flow studies	USFIC IRSR rev 1 pg 172
OSP0000831228Q005	Question 005	SP 831228	Closed	Modeling strategies to address technical issues for fluid flow studies	USFIC IRSR rev 1 pg 172
OSP0000831229C001	Comment 001	SP 831229	Closed	Solitario Canyon fault as water infiltration pathway	USFIC IRSR rev 1 pg 173
OSP0000831229Q001	Question 001	SP 831229	Closed	Evaluation of wetting front instabilities for modeling the Yucca Mountain hydrologic regime	USFIC IRSR rev 1 pa 173
OSP0000831229Q002	Question 002	SP 831229	Closed	Obtaining hydrologic parameters for fractures	USFIC IRSR rev 1 pg 174

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831229Q003	Question 003	SP 831229	Closed	Measurement of local water gradients in fractures to infer net moisture flux rates	USFIC IRSR rev 1 pg 174
OSP0000831229Q004	Question 004	SP 831229	Closed	Calibration of hydrologic sub-models using experimental pertubations	USFIC IRSR rev 1 pg 174
OSP0000831229Q005	Question 005	SP 831229	Closed	Evaluation of modeling the non-Darcian flow regime in specific fault zones	USFIC IRSR rev 1 pg 174
OSP0000831233C001	Comment 001	SP 831233	Closed	Hydrochemical data to support groundwater models	USFIC IRSR rev 1 pg 175
OSP0000831233Q001	Question 001	SP 831233	Closed	Which hydrologic codes may be used to model complex heterogeneities in the saturated zone	USFIC IRSR rev 1 pg 175

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831233Q002	Question 002	SP 831233	Closed	Methods to incorpoarte - solft - information in analyses of hydrologic parameters	USFIC IRSR rev 1 pg 176
OSP0000831233Q003	Question 003	SP 831233	Closed	Integration of hydrologic modleing with other site characterization activities	USFIC IRSR rev 1 pg 176
OSP0000831233Q004	Question 004	SP 831233	Closed	Meaning of - actual results should be bounded in a statistical sense by predicted results?	USFIC IRSR rev 0 pg 24
OSP0000831233Q005	Question 005	SP 831233	Closed	Selections of upper and lower boundary conditions of the 3D groundwater model	USFIC IRSR rev 1 pg 177
OSP0000831233Q006	Question 006	SP 831233	Closed	How to demonstrate that fracture-network models represent the saturated goundwater system?	USFIC IRSR rev 1 pg 177

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831521C001	Comment 001	SP 831521	Closed	Limited consideration of evidence for paleowater table elevations	Closed, NRC reviewed Study Plan 11/24/89.
OSP0000831521Q001	Question 001	SP 831521	Closed	Adequacy of LANDSAT data for regional hydology studies	Closed, NRC reviewed Study Plan 11/24/89.
OSP0000831521Q002	Question 002	SP 831521	Closed	use of electromagnetic conductivity to determine depth to ground-water	Closed, NRC reviewed Study Plan 11/24/89.
OSP0000831521Q003	Question 003	SP 831521	Closed	Techniques to determine age of groundwater for quaternary hydology studies	Closed, NRC reviewed Study Plan 11/24/89.
OSP0000831521Q004	Question 004	SP 831521	Closed	Estimating analog recharge for quaternary hydrology studies	Closed, NRC reviewed Study Plan 11/24/89.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831521Q005	Question 005	SP 831521	Closed	Techniques to characerize silica for quaternary hydology studies	Closed, NRC reviewed Study Plan 11/24/89.
OSP0000831521Q006	Question 006	SP 831521	Closed	Tracer isotopic composition for quaternary hydrologic studies	USFIC IRSR rev. 2 pg 207
OSP0000831522C001	Comment 001	SP 831522	Closed	Gap in the documentation of ground-water modeling for regional hydrology studies	USFIC IRSR rev 1 pg 178
OSP0000831522Q001	Question 001	SP 831522	Closed	Integration of regional-hydrologic studies with site unsaturated zone modeling	USFIC IRSR rev 1 pg 179
OSP0000831522Q002	Question 002	SP 831522	Closed	Infiltration simulation which accounts for surface water runoff	USFIC IRSR rev 1 pg 179

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP00008315220003	Question 003	SP 831522	Closed	How will surface water models for regional hydrology studies be calibrated and validated	Subsumed by I IRSR USFIC, IRSR rev 0 pg 25 but missing in rev. 2

OITS for RDTME

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OAO030SEP1992C003	Comment 003	AO 30SEP1992	Closed	Planned area - not clearly defined in discussion of controlled area	RDTME IRSR Rev. 3 pg 103
OAO030SEP1992C004	Comment 004	AO 30SEP1992	Closed	Unclear legal description of controlled area	RDTME IRSR Rev. 3 pg 103
OAO030SEP1992Q001	Question 001	AO 30SEP1992	Closed	Figure reference in description of limKTIATS of the underground facility may be incorrect	RDTME IRSR Rev. 3 pg 103
OQA013OCT1994C001	Comment 001	QA 13OCT1994	Closed	The M&O QA program is not being effectively implemented in a manner that will assure acceptability of the ESF	RDTME IRSR Rev. 3 pg 66
OQA013OCT1994Q001	Question 001	QA 13OCT1994	Closed	Question regarding the various phases of proposed design and construction of ESF under differenc phases of Design Package 2C	RDTME IRSR Rev. 3 pg 66

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OQA013OCT1994Q002	Question 002	QA 13OCT1994	Closed	The potential of construction work to impact site characterization or the waste isolation capability of the site	RDTME IRSR Rev. 3 pg 66
OQA013OCT1994Q003	Question 003	QA 13OCT1994	Closed	Questions request more details regarding QA concerns as well as the design of the ESF	RDTME IRSR Rev. 3 pg 66
OSC0000001347C004	Comment 004	SCA	Closed	Lack of integration between design and testing activities and incomplete information needs for thermal and mechanical rock properties program	Subsumed by RDTME agreements
OSC0000001347C033	Comment 033	SCA	Closed	Engineering rock parameters not adequately integrated for three-dimensional rock characteristics model	Subsumed by RDTME agreements
OSC0000001347C037	Comment 037	SCA	Closed	Unclear if techniques for identification of blast fracturing are adequate to differentiate them from natural fractures	Current approach doe not involve drill and blast

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C040	Comment 040	SCA	Closed	Lack of clear estimate for number of borehole pairs for geostatistical analyses to ensure confidence	Closed 7/31/91 Ltr. Bernero to Bartlett
OSC0000001347C041	Comment 041	SCA	Closed	Tight clustering of boreholes described in SCP has not been adequately justified	Closed 7/31/91 Ltr. Bernero to Bartlett
OSC0000001347C055	Comment 055	SCA	Closed	Use of statistics in investigations on the spatial distribution of thermal and mechanical properties is unclear	RDTME IRSR Rev. 3 pg 101
OSC0000001347C056	Comment 056	SCA	Closed	Validation of models should be part of the overall test program for spatial distribution of thermal properties	RDTME IRST Rev. 3 pg101
OSC0000001347C057	Comment 057	SCA	Closed	Design verification studies do not consider investigating the effects of underground excavation in the tuff using alternative excavation methods	TBM excavation method was selected for the underground facility construction

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C058	Comment 058	SCA	Closed	Tests to verify design aspects under repository conditions not included in the In-Situ Design Verification Section	The tests will be reviewed under performance confirmation
OSC0000001347C070	Comment 070	SCA	Closed	Lack of justification for statement that blast control procedures are less important to postclosure performance	Blasting is the the proposed construction method
OSC0000001347C072	Comment 072	SCA	Closed	Concern with assumption used for determining length of time seals will be required	Closed, RDTME IRSR Rev. 3 pg.4
OSC0000001347C074	Comment 074	SCA	Closed	No DOE plans for in-situ testing of seal components under realistic and unlikely conditions	RDTME IRSR Rev. 3 pg 102
OSC0000001347C077	Comment 077	SCA	Closed	Insufficient consideration of retrieval accidents on preclosure radiation exposures	RDTME IRSR Rev. 3 pg 103

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C078	Comment 078	SCA	Closed	Cannot be determined if all the requirements of 10 CFR Part 20 are being considered in the design requirements for preclosure	10 CFR Part 63 does not prescribe specific design criteria
OSC0000001347C120	Comment 120	SCA	Closed	Lack of comprehensive, integrated, and prioritized plan for model and code validation	RDTME IRSR Rev. 3 pg 103 Also tracked in TSPAI IRSR
OSC0000001347C121	Comment 121	SCA	Closed	Seismic design criteria for ESF insufficiently described	Closed, RDTME IRSR Rev.1 pg 56.
OSC0000001347C122	Comment 122	SCA	Closed	No criteria for determining the acceptability of dry coring method as a means for surface based testing construction control	RDTME IRSR Rev.3 pg 103
OSC0000001347C124	Comment 124	SCA	Closed	Shaft drainage capacity is not fully discussed	Closed, design concepts have changed

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C127	Comment 127	SCA	Closed	Process to integrate technical data into decisions regarding shaft location appears inadequate and in a possible violation of the Design Acceptability Analysis criteria	Subsumed by I IRSR
OSC0000001347C128	Comment 128	SCA	Closed	Question if all requirements have been considered in evaluationg the acceptability of ESF Title I design	Subsumed by I IRSR
OSC0000001347C129	Comment 129	SCA	Closed	Concerns about the consideration of the applicable 10 CFR 60 requirements	Subsumed by I IRSR
OSC0000001347C130	Comment 130	SCA	Closed	DAA does not have detailed design criteria for All Part 60 requirements applicable to the ESF	RDTME IRSR Rev. 3 pg 65
OSC0000001347C131	Comment 131	SCA	Closed	DAA does not address adequacy of data used in Title I design, or document review	Subsumed by I IRSR

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C132	Comment 132	SCA	Closed	Requirements of 10 CFR 60 toconsider major design features have not been adequately addressed in evaluating the acceptability of ESF Title I design	Requirements of Part 60 are not relevant (Part 63 are used now)
OSC0000001347C133	Comment 133	SCA	Closed	Question concerning the thoroughness of the DAA and adequacy of reviews	Design concepts have changed
OSC0000001347O001	Objection 001	SCA	Closed	Lack of adequate Title I design control & adequacy of Title I design	This item is closed by completion of the ESF.
OSC0000001347Q003	Question 003	SCA	Closed	Question the rationale for selecting the total area needed for repository development	RDTME IRSR Rev. 3 pg 65
OSC0000001347Q005	Question 005	SCA	Closed	Question the rationale for planning only vertical boreholes for evaluation of faults and fractures when use of vertical and angled boreholes were discussed in the CDSCP	Closed , also tracked in SDS

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q009	Question 009	SCA	Closed	Systematic drilling program needs implementation strategy for determining multiple properties from a sample for the purpose of correlating variability of different parameters	RDTME IRSR Rev.3 pg 101
OSC0000001347Q017	Question 017	SCA	Closed	Question activities are planned to investigate the effects of radiation on thermal and mechanical rock properties	Radiation effects on rock properties are considered not significant
OSC0000001347Q018	Question 018	SCA	Closed	Question how the allowable movement on joints be related to rock-mass strength	Subsumed by RDTME agreements
OSC0000001347Q020	Question 020	SCA	Closed	What site information will be used for the vertical vs horizontal emplacement orientation decision	RDTME IRSR Rev. 2 pg 73
OSC0000001347Q021	Question 021	SCA	Closed	Comprehensiveness and accuracy of parameters and parameter values for radiation shielding of the host rock	RDTME IRSR Rev. 2 pg 73

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q024	Question 024	SCA	Closed	Question justification for conclusion concerning shaft liner providing structural support for the formation	Design concepts have changed
OSC0000001347Q025	Question 025	SCA	Closed	No consideration in sealing program of gaseous transport through faults	RDTME IRSR Rev. 3 pg 102
OSC0000001347Q026	Question 026	SCA	Closed	Question apparent inconsistency between tentative design goals and design-basis performance goals for shafts and ramps inflow	Design concepts have changed
OSC0000001347Q027	Question 027	SCA	Closed	Question water storage capacity at base of shaft for attaining the tentative design goal	Design concepts have changed
OSC0000001347Q028	Question 028	SCA	Closed	Impacts on sealing program and Issue Resolution Strategy 4.4 of ES-1 penetration of Calico Hills	RDTME IRSR Rev. 3 pg 102

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q041	Question 041	SCA	Closed	Regulatory basis for Issue Resolution Strategy 2.4 on waste retrieval	Subsumed by I IRSR, RDTME IRSR Rev.3 pg 65
OSC0000001347Q042	Question 042	SCA	Closed	Basis for the expectation that vertical emplacement holes will remain stable throughout retrieval period	RDTME IRSR Rev. 3 pg 65
OSC0000001347Q043	Question 043	SCA	Closed	Question if anticipated operational occurrences are being considered as part of normal conditions in the preclosure design and analysis	Also tracked in CLST, CLST IRSR Appendix A
OSC0000001347Q044	Question 044	SCA	Closed	What are the bases for the assumed numbers of breached assemblies or canisters	Also tracked in CLST, CLST IRSR Appendix A
OSC0000001347Q055	Question 055	SCA	Closed	No Analysis of potential test interference from water storage facilities	RDTME IRSR Rev. 3 pg 103;Also tracked in USFIC, IRSR rev 1 pg 168

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q056	Question 056	SCA	Closed	Justification for selecting a tolerance of 5 cm fault displacement	RDTME IRSR Rev. 3 pg 66
OSC0000001347Q057	Question 057	SCA	Closed	Concern about effect of test borehole drilling on design flexibility	RDTME IRSR Rev. 3 pg 66
OSC0000001347Q059	Question 059	SCA	Closed	Basis for duration of thermal tests	Closed, also tracked in TEFr
OSC0000001347Q061	Question 061	SCA	Closed	Question manner of control of design changes during design and construction of ESF	ESF construction is complete
OSC0000001347Q062	Question 062	SCA	Closed	Concern with the design requirement for 30 m separation between ESF and waste emplacement panels	RDTME IRSR Rev. 3 pg 66

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831421Q001	Question 001	SP 831421	Closed	Status of seal design for boreholes for characteriztion studies of stratigraphic units	RDTME IRSR Rev. 3 pg 102
OSP0000831421Q002	Question 002	SP 831421	Closed	Specifications for sealing boreholes for characterization of stratigraphic unKTIATS	RDTME IRSR Rev. 3 pg 102

OITS for ENFE

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C029	Comment 029	SCA	Closed	Lack of study of the effects of radioactive decay heat, the nuclear radiation field, and the effect of certain microorganisms introduced during site construction	ENFE IRSR Rev.3 pg 80. Also tracked in SDS IRSR Rev. 2 pg 58;RT IRSR pg 78
OSC0000001347C079	Comment 079	SCA	Closed	No demonstration that waste package corrosion test environment is representative of actual repository environment	ENFE IRSR Rev. 3 pg 80. Also tracked in CLST IRSR Appendix A
OSC0000001347C089	Comment 089	SCA	Closed	Use of grouts, cements, and organic materials in the repository can alter pH and affect corrosion and leach rates	ENFE IRSR Rev.3 pg 80. Also tracked in CLST IRSR Appendix A.
OSC0000001347C092	Comment 092	SCA	Closed	Delineation of the boundary of the disturbed zone does not include changes in physical or chemincal properties as a result of generated heat	ENFE IRSR Rev. 3 pg 80
OSC0000001347Q030	Question 030	SCA	Closed	Expected quality of water which may contact waste packages and changes in quality over time	ENFE Rev. 3 pg81. Also tracked in USFIC, CLST IRSR Appendix A.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831321C001	Comment 001	SP 831321	Closed	Inadequate information collected to determine textural relationships of minerals along groundwater pathways	ENFE IRSR Rev. 3 pg 81. Also tracked in RT IRSR, NRC reviewed Study Plan 8/20/90 (NUDOC 89001141), had no objections.
OSP0000831321Q002	Question 002	SP 831321	Closed	Potential for bias in retardation calculations form use of vertical core thin sections to obtain groundwater pathway mineral data	ENFE IRSR Rev 3 pg 81
OSP0000831321Q004	Question 004	SP 831321	Closed	Methods for determining changes in lithology for mineral studies Methods for determining changes in lithology for mineralogy studies	ENFE IRSR Rev. 3 pg 81
OSP0000831321Q005	Question 005	SP 831321	Closed	The difference between software and model verification/validation for mineralogy studies	ENFE IRSR Rev.3 pg 81

OITs for CLST

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OAO017APR1992C001	Comment 001	AO 17APR1992	Closed	Disposal of waste forms other than SF and HLW not considered	Subsumed by I IRSR, DOE must address how they plan to dispose these before LA, These are LLW and will be in small quantities
OSC0000001347C005	Comment 005	SCA	Closed	Uncertainties in definition of Substantially Complete Containment (SCC)	CLST IRSR Appendix A
OSC0000001347C025	Comment 025	SCA	Closed	No rationale for additional testing needs to determine the influence of package degradation products and radionuclide interactions on sorption	Also tracked in ENFE , SDS & RT, CLST IRSR Appendix A, ENFE(Rev.3 pg 80),SDS pg 59
OSC0000001347C044	Comment 044	SCA	Closed	Goal for waste package performance stated here is not consistent with the interpretation of substantially complete containment elsewhere in SCP	CLST IRSR pg A-1
OSC0000001347C080	Comment 080	SCA	Closed	Substantially complete containment performance goals inconsistent with DOE's interpretation of the rule	CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C081	Comment 081	SCA	Closed	Assumptions regarding waste container surface wetness for cracking behavior studies inconsistent with information presented for corrosion model	CLST IRSR Appendix A, ENFE IRSR (Rev.3 pg 80)
OSC0000001347C082	Comment 082	SCA	Closed	Inadequate discussion of waste package performance verification	Subsumed by I IRSR, CLST IRSR AppendixA,Per.Conf. Plan Test # PM-02, PM-03, PM-09, PM-10, PE-03, PE-04
OSC0000001347C083	Comment 083	SCA	Closed	The term - uniform corrosion - is misleading	CLST IRSR Appendix A
OSC0000001347C084	Comment 084	SCA	Closed	Incomplete consideration of potential conditions and events which could impact waste package and EBS issue resolution strategies and testing programs	also tracked in SDS, CLST IRSR Appendix A, ENFE IRSR (Rev.3 pg 80)
OSC0000001347C085	Comment 085	SCA	Closed	No consideration of temporal changes in the state of stress on waste package corrosion	CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C086	Comment 086	SCA	Closed	Basis for copper-base alloy degradation modes does not agree with scientific literature	CLST IRSR Appendix A
OSC0000001347C087	Comment 087	SCA	Closed	The potential for galvanic corrosion of the waste package is not adequately addressed in material lab tests	CLST IRSR Appendix A
OSC0000001347C088	Comment 088	SCA	Closed	Assumption that stress corrosion cracking uncertainties are lower under unsaturated conditions compared with saturated conditions is not valid	CLST IRSR Appendix A, Summary of Tech. Exchange 9-12-00 Issue 3, Items 7 & 9
OSC0000001347C090	Comment 090	SCA	Closed	Effects of varying oxygen concentrations on waste package corrosion is not considered in the waste package environment model	also tracked in ENFE,CLST IRSR Appendix A, ENFE (Rev.3 pg 80)
OSC0000001347C091	Comment 091	SCA	Closed	No discussion of how alternative canister designs can limit C-14 release rate	CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q031	Question 031	SCA	Closed	Performance allocation for cladding - will DOE repair damaged cladding prior to emplacement	CLST IRSR Appendix A, Summary of Tech. Exchange 9-12-00 Issue 3, Items 8 & 9
OSC0000001347Q032	Question 032	SCA	Closed	Clarification needed regarding similarities between container for borosilicate glass waste form and spent fuel	CLST IRSR Appendix A,PR 16 provided definitive description, Summary of Tech. Exchange 9-12-00 Issue 4
OSC0000001347Q034	Question 034	SCA	Closed	Meaning of - undetected defective closures - in waste package fabrication and handling design goals	CLST IRSR Appendix A
OSC0000001347Q035	Question 035	SCA	Closed	Basis for the waste package helium leak test acceptance criteria	CLST IRSR Appendix A
OSC0000001347Q036	Question 036	SCA	Closed	Explanation and justification for use of corrosive surface finishing chemicals on waste package prior to emplacement	CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q037	Question 037	SCA	Closed	Basis for using 10 cm drop as design goal for protection against emplacement of damaged waste canisters	CLST IRSR Appendix A
OSC0000001347Q038	Question 038	SCA	Closed	Basis for 1 mm scratch criterion to avoid emplacement of damaged canisters	CLST IRSR Appendix A
OSC0000001347Q039	Question 039	SCA	Closed	Meaning of - unusual process history - as a criterion to avoid emplacement of damaged canisters	CLST IRSR Appendix A
OSC0000001347Q040	Question 040	SCA	Closed	Basis for design goal for the corrosion rate of the waste package borehole liner	CLST IRSR Appendix A
OSC0000001347Q045	Question 045	SCA	Closed	Data needs for waste package particulate source terms, containment vessel retention factors, and gravitational settlement factors	CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q046	Question 046	SCA	Closed	Basis for more stringent control of long half-life isotope release during the containment period	CLST IRSR Appendix A
OSC0000001347Q047	Question 047	SCA	Closed	What is the origin of the definition of a container failure	CLST IRSR Appendix A
OSC0000001347Q049	Question 049	SCA	Closed	Surface conditioning of HLW canisters and tests for various effects	CLST IRSR Appendix A
OSC0000001347Q050	Question 050	SCA	Closed	Question assumption in analysis of stress corrosion crack propagation	CLST IRSR Appendix A
OSC0000001347Q051	Question 051	SCA	Closed	Impacts of INEL and Hanford high-level wastes on the Waste Package Site Characterization Program at YM	CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q052	Question 052	SCA	Closed	Question the specifics and appropriateness of leach testing	CLST IRSR Appendix A
OSC0000001347Q053	Question 053	SCA	Closed	Why has the cooling rate of the glass waste form not been specified	CLST IRSR Appendix A
OSC0000001347Q054	Question 054	SCA	Closed	Question test of rate of release of radionuclides from spent fuel in J-13 water	CLST IRSR Appendix A
OSC0000001347Q058	Question 058	SCA	Closed	Does ESF design accommodate in-situ waste package testing	Also tracked in RDTME, CLST IRSR Appendix A,RDTME Rev. 2 pg 74
OSP0000831821C001	Comment 001	SP 831821	Closed	Inconsistencies with overall perfomance goal for waste packages	NRC reviewed Study Plan 11/19/93, no objections.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831821C003	Comment 003	SP 831821	Closed	Justification for 5 cm performance parameter for faulting impacts on waste package	Also tracked in SDS, NRC reviewed Study Plan 11/19/93, had no objections
OSP0000831821C004	Comment 004	SP 831821	Closed	Effects of stress field changes due to thermal loading on anticipated perocesses and events used in package rupture analyses	Also tracked in RDTME, NRC reviewed Study Plan 11/19/93, had no objections.
OSP0000831821Q002	Question 002	SP 831821	Closed	Consideration of potential chemical effects on waste pakage from tectonism	Also tracked in ENFE, NRC reviewed Study Plan 11/19/93, had no objections.
OSP0000831821Q003	Question 003	SP 831821	Closed	Magnitude range of tectonic events which can impact corroded canisters	Also tracked in SDS, NRC reviewed Study Plan 11/19/93, had no objections

OITS for RT

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C023	Comment 023	SCA	Closed	Program does not plan to study the potential process of concentrating radionuclides on fracture surfaces	RT IRSR Rev. 2 pg 121
OSC0000001347C024	Comment 024	SCA	Closed	Insufficient approach to determine reliable thermodynamic properties of zeolites	RT IRSR Rev. 2 pg 121
OSC0000001347C026	Comment 026	SCA	Closed	Inadequate evidence to conclude existing sorption characterization data sufficient for performance assessment analyses	RT IRSR Rev. 2 pg 121
OSC0000001347C027	Comment 027	SCA	Closed	Planned sorption tests cannot result in a mechanistic understanding of sorptive processes	RT IRSR Rev. 2 pg 121
OSC0000001347C028	Comment 028	SCA	Closed	Lack of studies to evalute the effects of specific colloid formation	RT IRSR Rev. 2 pg 121, Also tracked in CLST IRSR Appendix A

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C030	Comment 030	SCA	Closed	Lack of methodology and procedures for evaluating existing thermodynamic data to be used in solubility modeling	RT IRSR Rev. 2 pg 121; ENFE IRSR pg 95, Also tracked in CLST, CLST IRSR pg A-1
OSC0000001347C031	Comment 031	SCA	Closed	No plans to determine parameters and conditions such as speciation, kinetics, and matrix diffusion under fracture flow in retardation studies	RT IRSR Rev. 2 pg 122
OSC0000001347C096	Comment 096	SCA	Closed	Validity of using Kd's to model retardation at Yucca Mountain for all anticipated states of the groundwater flow system has not been established	RT IRSR Rev.2 pg 123
OSC0000001347C097	Comment 097	SCA	Closed	Inadequate evidence presented that iodine can be eliminated as an important radionuclide which can be transported in the gaseous phase	Also tracked in CLST, CLST IRSR pg A-3
OSC0000001347C106	Comment 106	SCA	Closed	Concerns of completeness of the radionuclide transport equation	Also tracked in TSPAI IRSR rev 1 Table 3

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C109	Comment 109	SCA	Closed	Alternative models based upon the nature of coupling times for transfer of mass between matrix and fracture flow are not provided in hypothesis testing tables	RT IRSR Rev. 2 pg 124
OSP0000831321Q001	Question 001	SP 831321	Closed	Selection of characterization methods for transport data given accuracy of data needed is not yet determined	Closed, NRC reviewed Study Plan 8/20/90
OSP0000831321Q003	Question 003	SP 831321	Closed	Integration of mineralogy data with batch sorption study needs	Closed, NRC reviewed Study Plan 8/20/90.
OSP0000831362Q001	Question 001	SP 831362	Closed	Demonstration of diffusion of radionuclieds in Tuff	Closed, NRC reviewed Study Plan 1/19/94.
OSP0000831521C003	Comment 003	SP 831521	Closed	No plan to characterize organic material in spring to support modeling uranium transport	Closed, NRC reviewed Study Plan 6/24/93.

Rept-OITs for TEF

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C011	Comment 011	SCA	Closed	No hypotheses for thermal effects on hydrologic system from emplaced waste	TEF IRSR Rev. 1 pg 36
OSC0000001347C073	Comment 073	SCA	Closed	Design approach to determine backfill hydraulic conductivity is not conservative	TEF IRSR Rev. 1 pg 36
OSC0000001347Q033	Question 033	SCA	Closed	Justification for accepting 5L of accumulated standing water per canister in the first 1000 years	TEF IRSR pg 37. Also tracked in CLST Appendix A ,
OSP0000834243Q001	Question 001	SP 834243	Closed	Alternatives to proposed thermal loading strategies	Closed, NRC reviewed Study Plan 4/21/93, also tracked in RDTME.
OSP0000834243Q002	Question 002	SP 834243	Closed	Relationship between undeveloped geomechanical WP environment studies and planned WSF thermal and mechanical testing	Closed, NRC reviewed Study Plan 4/21/93. Also tracked in RDTME.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000834243Q003	Question 003	SP 834243	Closed	Impacts on geomechanical studies of WP environment from lack of data from integrated studies	Closed, NRC reviewed Study Plan 4/21/93. Also tracked in RDTME.
OSP0000834243Q004	Question 004	SP 834243	Closed	Prediction method for thermomechanical responses, borehole damage and long-erm radiation effects	Closed, NRC reviewed Study Plan 4/21/93. Also tracked in RDTME
OSP0008311511Q001	Question 001	SP 8311511	Closed	Will studies consider the effects of anisotropy, and natural fractures, on thermal expansion characteristics of rock samples	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.
OSP0008311511Q002	Question 002	SP 8311511	Closed	Lack of flexibility in thermal properties test conditions to take into account high thermal loading option	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME
OSP0008311511Q003	Question 003	SP 8311511	Closed	Rationale for magnitudes of confining pressures applied to fractures during theraml properties testing of fractures	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0008311511Q004	Question 004	SP 8311511	Closed	Rationale for conducting multiple thermal properties tests on the same samples and the change in initial test conditions generated as a result	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.
OSP0008311512Q001	Question 001	SP 8311512	Closed	Studies should consider the effects of anisotropy, and natural fractures, on thermal expansion characteristics of rock samples	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.
OSP0008311512Q002	Question 002	SP 8311512	Closed	Lack of flexibility in high thermal loading option	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.
OSP0008311512Q003	Question 003	SP 8311512	Closed	Rationale for applying confining presssure to fractures	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.
OSP0008311512Q004	Question 004	SP 8311512	Closed	Rationale for heating and cooling TSw2 unit	Closed, NRC reviewed Study Plan 8/22/94. Also tracked in RDTME.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0008311515Q001	Question 001	SP 8311515	Closed	Validation of geomechanical model with limited data from excavation investigations	Closed, NRC reviewed Study Plan 8/19/94Also tracked in RDTME.

OITs for IA

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C043	Comment 043	SCA	Closed	Poor rationale for choice of numeric goals regarding faulting, erosion, and volcanism	Comment is no longer valid due to change in standard. Acceptance criteria are now discussed in IA IRSR Rev. 2 Sections 4.0. Probabilitiy issues are discussed in Section 5
OSC0000001347C045	Comment 045	SCA	Closed	DOE's use of volcanic rate calculations can underestimate impacts on performance	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.142
OSC0000001347C049	Comment 049	SCA	Closed	Satisfying performance goals for volcanism may result in site failing to meet system performance requirements	Closed, NRC letter, J. Holonich to DOE's R. Milner, 9/14/1994
OSC0000001347C051	Comment 051	SCA	Closed	Geophysical survey programs insufficient to identify and characterize deep crustal and shallow geologic features	Closed as documented in IA IRSR Rev. 2 Section 5.3., p.143. Also documented in SDS IRSR Rev. 2 pg D-1,D-4
OSC0000001347C052	Comment 052	SCA	Closed	No geophysical program planned to identify volcanic/igneous features	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.143

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q012	Question 012	SCA	Closed	Lunar crater area not included as possible natural analog for studies on Basaltic volcanism in the Pancake Range Volcanic Belt	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.143
OSC0000001347Q013	Question 013	SCA	Closed	Question apparent contradictory statements about the migration, structural boundaries and stage of volcanism at Yucca Mountain	Subsumed by I IRSR
OSP0000831811C001	Comment 001	SP 831811	Closed	Limited interpretation of - event - in describing magmatic processes and events	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.143
OSP0000831811C002	Comment 002	SP 831811	Closed	Using surface extrusion rates could underestimate the effects of magmatic process	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.144
OSP0000831811C003	Comment 003	SP 831811	Closed	Requirements must be met for evaluation of the presence of crustal magma bodies	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.144

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831811C004	Comment 004	SP 831811	Closed	Limitations of probability of future magmatic disruption of the Yucca Mountain site	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.144
OSP0000831811C005	Comment 005	SP 831811	Closed	Volcanic recurrence model needs information on small volcanic events	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.144
OSP0000831811C006	Comment 006	SP 831811	Closed	Recurrence rate vs average recurrence rate	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.144
OSP0000831811C007	Comment 007	SP 831811	Closed	Study plan does not consider models that assume volcanism is a non-poissonian process	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.145
OSP0000831811C008	Comment 008	SP 831811	Closed	Inability to demonstrate compliance with performance objective	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 2/08/96

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831811C009	Comment 009	SP 831811	Closed	Limitation of the geophysical program	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.145
OSP0000831811C010	Comment 010	SP 831811	Closed	Methodology for calculating reporitory disruption may be incorrect	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.146
OSP0000831811C011	Comment 011	SP 831811	Closed	Equation for the disruption probability should be revised	Comment is no longer valid. Acceptance criteria are discussed in IA IRSR Rev.2 Section 4.0
OSP0000831811Q001	Question 001	SP 831811	Closed	Descriptin for the silicic volcanism evaluation program	Closed, acceptance criteria forvolcanism program is subsumed in IA IRSR Rev. 2, Section 4.0
OSP0000831812C001	Comment 001	SP 831812	Closed	Concerns with DOE's use of the tripartite probability in volcanism investigations	Closed, NRC letter M. Bell to DOE's S. Brocoum, 2/08/96

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831812C002	Comment 002	SP 831812	Closed	Volatility of contents of basaltic eruptions not addressed in volcanism plans	IA IRSR Rev. 2 Section 5.3, p. 146
OSP0000831812C003	Comment 003	SP 831812	Closed	Underestimation of the effects of basaltic eruptions in volcanism plans	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831812C004	Comment 004	SP 831812	Closed	Thermal and degassing effects cannot be quantified using methods proposed for volcanism sudies	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831812C005	Comment 005	SP 831812	Closed	Use of probability threshold for termination of volcanism effects studies	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831812C006	Comment 006	SP 831812	Closed	Plans for studies of zeolite alteration from magmatic intrusion only if release results based on flawed logic	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831912C007	Comment 007	SP 831812	Closed	The number of Quaternary volcanic centers	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831812C008	Comment 008	SP 831812	Closed	Limitations in lithic fragment studies for assessing impacts of magmatism on repository	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831812C009	Comment 009	SP 831812	Closed	Modifications of lithostatic pressure must be considered in volcanic effects studies	IA IRSR Rev. 2 Section 5.3, p.147
OSP0000831812C010	Comment 010	SP 831812	Closed	Exclusion of Buckboard Mesa in magmatic effects sutdies limKTIATS understanding of magmatic processes	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831812Q001	Question 001	SP 831812	Closed	Ranges of the number or volume of eruptive events for magmatic effects studies	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831812Q002	Question 002	SP 831812	Closed	use of - Crater Flat Volcanic Zone - and - Crater Flat	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831821C002	Comment 002	SP 831821	Closed	Incomplete description of magmatic events for waste package rupture studies	Closed, NRC reviewed Study Plan 11/19/93, no objections.
OSP0000831851Q001	Question 001	SP 831851	Closed	Exclustion of oriented core from drill holes for characterization of volcanic features	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831851Q002	Question 002	SP 831851	Closed	Seclection of geochronology methods for characterization of volcanic features	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP0000831851Q003	Question 003	SP 831851	Closed	Selection criteria for analog volcanic fields for volcanic feature studies	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.147

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831852C001	Comment 001	SP 831852	Closed	Lack of geophysical program for identifying volcanic/igneous features	DOE changed objective of SP and rolled it up with some other plans. Concern is subsumed in I IRSR
OSP0000831852Q001	Question 001	SP 831852	Closed	Heat flow measurements of the Lathrop Wells cone for igeous intrusion studies	DOE changed objective of SP and rolled it up with some other plans. Concern is subsumed in I IRSR
OSP0000831852Q002	Question 002	SP 831852	Closed	Estimates of the Curie Temperature Isotherm for characterization of igneous intrusive features	DOE changed objective of SP and rolled it up with some other plans. Concern is subsumed in I IRSR
OSP0000831852Q003	Question 003	SP 831852	Closed	Characterization of heat flow conditions in the Paleozoic carbonate aquifer for igneous studies	DOE changed objective of SP and rolled it up with some other plans. Concern is subsumed in I IRSR
OSP00831851R1C001	Comment 001	SP 831851R1	Closed	Insufficient aeromagnetic data to detect and resolve magnetic anomolies associated with small intrusions	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.147

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP00831851R1C002	Comment 002	SP 831851R1	Closed	Concern over the accuracy of thermoluminescence dating of soil	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP00831851R1C003	Comment 003	SP 831851R1	Closed	Questionable basis for assuming the young tephra in the quarry south of Lathrop Wells cone in contemporaneous with the cima Field 20 ka Black Tank cone	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP00831851R1C004	Comment 004	SP 831851R1	Closed	Calcualation of eruptive basalt volume	IA IRSR Rev. 2 Rev. 2 Section 5.3, p.147
OSP00831851R1C005	Comment 005	SP 831851R1	Closed	Testing the model that assumes northwest trending structures provide deep-seated control on magma pathways	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.147
OSP00831851R1C006	Comment 006	SP 831851R1	Closed	Xenolith content of the lathrop Wells and other cinder cones and study of abundances	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP00831851R1C007	Comment 007	SP 831851R1	Closed	Resolution of alternative petrogenic models	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.148
OSP00831851R1Q001	Question 001	SP 831851R1	Closed	Methods considered for the determination of all important rock magnetic properties	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP00831851R1Q002	Question 002	SP 831851R1	Closed	Paleomagnetic directions sampled for the Crater Flat System for characterization of volcanic features	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP00831851R1Q003	Question 003	SP 831851R1	Closed	Characterization of intrusion geometries associated with the development of the Crater Flat alignment	Closed as documented in IA IRSR Rev. 2 Section 5.3
OSP00831851R1Q004	Question 004	SP 831851R1	Closed	Integration of seismic tomographic data into volcanological site characterization as the project continues	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP00831851R1Q005	Question 005	SP 831851R1	Closed	Accuracy of age determinations to represent the age of cones for volcanic features characterization studies	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.148
OSP00831851R1Q006	Question 006	SP 831851R1	Closed	Incorporation of geodetic date into volcanological site-characterization	Closed, NRC letter, M. Bell to DOE's S. Brocoum, 3/14/96
OSP00831851R1Q008	Question 008	SP 831851R1	Closed	Use of volumetric relationships from volcanic systems in western North America to develop models for the Crater Flat system	Closed as documented in IA IRSR Rev. 2 Section 5.3, p.148
OSP00831851R1Q009	Question 009	SP 831851R1	Closed	Characterization of phenocryst minerology in sparsely phyric rocks for volcanic features studies	Closed. This question was posed to address the adequacy of DOE's volcanic features studies to supprt igneous modeling. The adequacy of igneous activity program for site characterization is subsumed by DOE/NRC Igneous Activity Agreements.

OITS for SDS

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OAO028MAY1993C004	Comment 004	AO 28MAY1993	Closed	Seismic network monitoring and geodetic leveling performance confirmation programs do not include controlled area	Subsumed by I IRSR, Perf. Conf. Plan TDR-PCS-SE-000001Rev01 ICN01,Test#BD-01
OSC0000001347C008	Comment 008	SCA	Closed	Alternative tectonic models not fully integrated into SCP and not considered in EBS performance allocations	SDS IRSR Rev. 2 pg D-1, D-2
OSC0000001347C032	Comment 032	SCA	Closed	Lack of integration in geophysical investigations	Subsumed in I IRSR, SDS IRSR Rev.2 pg D-1, D-2
OSC0000001347C035	Comment 035	SCA	Closed	The program of drifting in the north, combined with systematic drilling, appears unlikely to provide the information necessary to adequately investigate conditions at the site	Also tracked in RDTME
OSC0000001347C036	Comment 036	SCA	Closed	Rationale for the geologic framework of YM investigation may not be accurate with regard to faulting within the perimeter drift	SDS IRSR Rev. 2 pg D-1,D-3,"Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C038	Comment 038	SCA	Closed	No justification is given for not characterizing minor faults and fault zones	Subsumed in I IRSR, "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C046	Comment 046	SCA	Closed	The physical domain for postclosure tectonics issues appears to be inadequate for the evaluation	Subsumed by I IRSR, "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C047	Comment 047	SCA	Closed	Approach for use of tectonic data for assessing compliance with waste package and EBS performance requirements may lead to inaccurate results	SDS IRSR Rev. 2 pg D-1,D-3; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998. Also tracked in CLST IRSR Appendix A
OSC0000001347C048	Comment 048	SCA	Closed	Fault Slip Rates	SDS IRSR Rev. 2 pg D-1, D-4; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998. Also tracked in TSPAI
OSC0000001347C050	Comment 050	SCA	Closed	Considering faults as narrow single strands may underestimate the effects of faulting on the results of planned tests	Subsumed by I IRSR, "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C059	Comment 059	SCA	Closed	Inadequate description of faulting activities to determine performance and design bases	SDS IRSR Rev. 2 pg D-1, D-5; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C060	Comment 060	SCA	Closed	Insufficient justification for design and performance parameters, characterization parameters, and goals for fault displacement	SDS IRSR Rev. 2 pg D-1, D-5; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C061	Comment 061	SCA	Closed	Assumptions for future faulting not conservative	SDS IRSR Rev. 2 pg D-1, D-6; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C062	Comment 062	SCA	Closed	Description of faulting investigations for surface facilities does not explain use of standoff distances for investigations, design and analysis	SDS IRSR Rev. 2 pg D-1, D-6
OSC0000001347C063	Comment 063	SCA	Closed	Insufficient background information for faulting investigations	SDS IRSR Rev. 2 pg D1, D-7; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C064	Comment 064	SCA	Closed	Characterization parameters for identification and characterization of significant quaternary faults may not meet Part 60 requirements	Part 60 no longer relevant
OSC0000001347C065	Comment 065	SCA	Closed	Use of domains to define areas of - faulting potential - potential - does not appear to be a reasonably conservative and technically justifiable approach	Subsumed by I IRSR; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C066	Comment 066	SCA	Closed	Use of a single event assumption for the 10,000 year cumulative slip earthquake methodology may be inadequate to characterize fault and seismic activity	SDS IRSR Rev. 2 pg D1, D-8; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998 considers alternative methods
OSC0000001347C067	Comment 067	SCA	Closed	Data collected in accordance with earthquake magnitude cutoff of 5.5, may not be sufficient to support evaluation of local site geology	SDS IRSR Rev. 2 pg D1, D-9; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C068	Comment 068	SCA	Closed	Inadequate consideration of relevant aspects of detachment faulting	SDS IRSR Rev. 2 pg D-1, D9; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347C069	Comment 069	SCA	Closed	Data resulting from studies of Northwest trending faults not integrated	SDS IRSR Rev. 2 pg D-1, D-9; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C071	Comment 071	SCA	Closed	Tentative goal, design parameter, and expected value for significant quaternary faulting are insufficient for characterizing fault hazard	SDS IRSR Rev. 2 pg D-1, D-10; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347C075	Comment 075	SCA	Closed	Lack of clear definition or consistent usage of the term - geologic setting	Subsumed by I IRSR
OSC0000001347Q001	Question 001	SCA	Closed	Question the DOE plan to integrate the various mapping tasks and the resultant information	Subsumed by I IRSR
OSC0000001347Q004	Question 004	SCA	Closed	Question how the temperature logging described will be sufficient to evaluate the significance identified anomalously low heat flow	Subsumed by I IRSR

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q006	Question 006	SCA	Closed	Question criteria used to select the discontinuities and other features of interest to be mapped	Subsumed by I IRSR
OSC0000001347Q007	Question 007	SCA	Closed	Questions restricting face mapping of exploratory drifts to anomalous conditions only	This question is moot. Exploratory drifts are complete
OSC0000001347Q008	Question 008	SCA	Closed	Measure of predictability to accompany the computer models, maps, and other illustrations and the transmission of uncertainties to model users for the three dimensional rock characteristics model	Subsumed by I IRSR, SDS IRSR Rev. 2 pg D-11
OSC0000001347Q010	Question 010	SCA	Closed	Question concerning method for formulation of a three-dimensional block model by dividing it into numerous orthogonal blocks	Subsumed by I IRSR
OSC0000001347Q011	Question 011	SCA	Closed	Question the start of drilling prior to approval of integrated drilling study plans	This question is moot. Drilling is complete.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSC0000001347Q016	Question 016	SCA	Closed	Question methods to be used to determine the impact of ground motion from underground nuclear explosions	Subsumed by I IRSR; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSC0000001347Q019	Question 019	SCA	Closed	Question consideration being given to the use of side looking airborne radar (SLAR) at Yucca Mountain	Subsumed by I IRSR
OSP0000831422Q001	Question 001	SP 831422	Closed	Integration of seismic reflection survey results from other studies with needs for structural features only	NRC reviewed Study Plan 2/8/93, had no objections.
OSP0000831521C002	Comment 002	SP 831521	Closed	Thermal scanner flight data may not provide sufficient areal coverage for regional properties	Subsumed by I IRSR, SDS IRSR Rev. 2 pg D-3
OSP0000831821C005	Comment 005	SP 831821	Closed	Simplistic description of dike emplacement used for study of tectonic effects on waste package	NRC reviewed Study Plan 11/19/93, no objections.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0000831821C006	Comment 006	SP 831821	Closed	Study of tectonic effects considers limited range of fault displacement calculations alternatives	NRC reviewed Study Plan 11/19/93, no objections.
OSP0000831821Q001	Question 001	SP 831821	Closed	Incomplete consideration of all tectonic processes which could affect the waste package	NRC reviewed Study Plan 11/19/93, no objections.
OSP0008311742C001	Comment 001	SP 8311742	Closed	Objective and scope of recency of faulting study plan may be inconsistent with overall siting goal	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311742C002	Comment 002	SP 8311742	Closed	Unclear how planned faulting activities meet purpose of p lan	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311742C003	Comment 003	SP 8311742	Closed	Other possible fault orientations should be considered in studies	Closed, NRC reviewed Study Plan 11/24/89.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0008311742C004	Comment 004	SP 8311742	Closed	Clarification of geophysical program for Midway Valley	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311742C005	Comment 005	SP 8311742	Closed	Studies may not provide enough information about facilities important tosafety (FKTIATS) design requirements	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311742C006	Comment 006	SP 8311742	Closed	Interface of faullting activities with 8.3.1.17.4.6.2 needs clarification	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311742C007	Comment 007	SP 8311742	Closed	Focal mechanism solutions for microearthquakes down play possiblity of strike-slip motion on east-west faults	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311742C008	Comment 008	SP 8311742	Closed	Treatment of tectonic characteristics may result in overly optimistic projection of faullting	Closed, NRC reviewed Study Plan 11/24/89.

Item ID	*Type*	*Source*	*Status*	*Topic*	*Rationale for Closing/Documentation*
OSP0008311742C009	Comment 009	SP 8311742	Closed	Radiometric age determinations in faulting studies may need re-evaluation	Closed, NRC reviewed Study Plan 11/24/89.
OSP0008311743C001	Comment 001	SP 8311743	Closed	Areal extent of geophysical surveys excludes the Little Skull Mountain region	Closed, NRC reviewed Study Plan 9/2/93.
OSP0008311743Q001	Question 001	SP 8311743	Closed	Criteria for identifying faults or lineaments?	Subsumed by I IRSR, "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998
OSP0008311743Q002	Question 002	SP 8311743	Closed	No shallow seismic reflection surveys in Quaternary faulting studies	Subsumed by I IRSR; "Probabilistic Seismic Hazard Analysis", DOE, Sept. 1998

OITS w/dual ownership

Item ID	*Type*	*Source*	*Status*	*Topic*	*KTI*	*Currently Tracked*
OSC0000001347C025	Comment 025	SCA	Closed	No rationale for additional testing needs to determine the influence of package degradation products and radionuclide interactions on sorption	CLST	Also tracked in ENFE , SDS & RT, CLST IRSR Appendix A, ENFE(Rev.3 pg 80),SDS pg 59
OSC0000001347C035	Comment 035	SCA	Closed	The program of drifting in the north, combined with systematic drilling, appears unlikely to provide the information necessary to adequately investigate conditions at the site	SDS	Also tracked in RDTME
OSC0000001347C084	Comment 084	SCA	Closed	Incomplete consideration of potential conditions and events which could impact waste package and EBS issue resolution strategies and testing programs	CLST	also tracked in SDS, CLST IRSR Appendix A, ENFE IRSR (Rev.3 pg 80)
OSC0000001347C090	Comment 090	SCA	Closed	Effects of varying oxygen concentrations on waste package corrosion is not considered in the waste package environment model	CLST	also tracked in ENFE,CLST IRSR Appendix A, ENFE (Rev.3 pg 80)
OSC0000001347C097	Comment 097	SCA	Closed	Inadequate evidence presented that iodine can be eliminated as an important radionuclide which can be transported in the gaseous phase	RT	Also tracked in CLST, CLST IRSR pg A-3

Item ID	*Type*	*Source*	*Status*	*Topic*	*KTI*	*Currently Tracked*
OSC0000001347C106	Comment 106	SCA	Closed	Concerns of completeness of the radionuclide transport equation	RT	Also tracked in TSPAI IRSR rev 1 Table 3
OSC0000001347Q043	Question 043	SCA	Closed	Question if anticipated operational occurrences are being considered as part of normal conditions in the preclosure design and analysis	RDTME	Also tracked in CLST, CLST IRSR Appendix A
OSC0000001347Q044	Question 044	SCA	Closed	What are the bases for the assumed numbers of breached assemblies or canisters	RDTME	Also tracked in CLST, CLST IRSR Appendix A
OSC0000001347Q058	Question 058	SCA	Closed	Does ESF design accommodate in-situ waste package testing	CLST	Also tracked in RDTME, CLST IRSR Appendix A,RDTME Rev. 2 pg 74
OSP0000831821C003	Comment 003	SP 831821	Closed	Justification for 5 cm performance parameter for faulting impacts on waste package	CLST	Also tracked in SDS, NRC reviewed Study Plan 11/19/93, had no objections

Item ID	*Type*	*Source*	*Status*	*Topic*	*KTI*	*Currently Tracked*
OSP0000831821C004	Comment 004	SP 831821	Closed	Effects of stress field changes due to thermal loading on anticipated perocesses and events used in package rupture analyses	CLST	Also tracked in RDTME, NRC reviewed Study Plan 11/19/93, had no objections.
OSP0000831821Q002	Question 002	SP 831821	Closed	Consideration of potential chemical effects on waste pakage from tectonism	CLST	Also tracked in ENFE, NRC reviewed Study Plan 11/19/93, had no objections.
OSP0000831821Q003	Question 003	SP 831821	Closed	Magnitude range of tectonic events which can impact corroded canisters	CLST	Also tracked in SDS, NRC reviewed Study Plan 11/19/93, had no objections