



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Reply to:

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Las Vegas, Nevada 89101

Tel: (702) 388-6125

JANUARY 14, 1993

TO: Charlotte Abrams, M/S 4 H 3

FROM: Philip S. Justus, Sr. On-Site Licensing Representative 

SUBJECT: STUDY PLAN INFORMATION SHEET (DOE - 10/30/92); SCHEDULE CHART FOR C-WELL COMPLEX TESTING; GEOPHYSICS INTEGRATION TASK FORCE (GITF): REQUEST FOR INFORMATION (DOE - 12/22/92); PHOTOS (Cutaway of a drift showing commingled waste packages and Preliminary Drawing of a Repository Complex); FOUR MAPS (Yucca Mountain Site Characterization Project Proposed 1992 Seismic Reflection Profiles - 4 areas)

Please find enclosed the above-referenced items.

PSJ:nan  
Enclosures as stated

210142

9301280164 930114  
PDR WASTE  
WM-11 PDR

*Drawings located in Central files*

*102  
WM-11  
N403*



Department of Energy  
Yucca Mountain Site Characterization  
Project Office  
P. O. Box 98608  
Las Vegas, NV 89193-8608

WBS 1.2.5.2.5  
QA: NA

OCT 30 1992

Distribution

STUDY PLAN INFORMATION SHEET

Enclosed is a Study Plan Information Sheet that contains information regarding the responsible participant, principal investigator (PI), Work Breakdown Structure (WBS) manager and status of Site Characterization Plan study plans. The sheet also contains the WBS element number associated with a particular study plan and a classification of the study plan into one of three groups: (1) Exploratory Studies Facility-related study plans; (2) surface-based testing study plans; or (3) modeling/synthesis/laboratory-related study plans.

The Yucca Mountain Site Characterization Project Office WBS managers and participant study plan coordinators should review the enclosed Study Plan Information Sheet and notify either Richard A. Crawley at (702) 794-7585 of my staff or Ralph D. Rogers of Civilian Radioactive Waste Management System Management and Operating Contractor at (702) 794-1892 by November 16, 1992, of any additional information (i.e., names of PIs) or corrections that should be incorporated into the next issue. The information sheet will be updated periodically and reissued to those on the distribution list, so please keep us informed as the information changes.

Thank you for your cooperation.

RSED:RAC-733

*Gauda M. Newberry*  
for Russell Dyer, Director  
Regulatory & Site Evaluation Division

Enclosure:  
Study Plan Information Sheet

*on the shelf*

Study Plan Information Sheet

#	SP NUMBER	SP NAMES/CODE	WBS ELEMENT	WBS MANAGER	CLASSIFY SBT, ESF	PI	STATUS ***
					M **		
1	8.3.1.2.1.1	CHAR OF MET FOR REG HYDRO AND MET MONITOR/USGS					
2	8.3.1.2.1.2	CHAR RUNOFF AND STREAMFLOW/USGS	1.2.3.3.1.1	GIRDLEY	SBT	FLINT	N/O
3	8.3.1.2.1.3	CHAR OF REG GRD W FLOW SYSTEM/USGS	1.2.3.3.1.1	GIRDLEY	SBT	GRASSO	N/O
4	8.3.1.2.1.4	REG HYDRO SYS SYN AND MODELING/USGS	1.2.3.3.1.1.3	GIRDLEY	SBT	CZARNECKI	N/O
5	8.3.1.2.2.1	CHAR UNSAT ZONE INFILTRATION/USGS	1.2.3.3.1.1.4	GIRDLEY	M	CZARNECKI	N/O
6	8.3.1.2.2.2	WATER MOVEMENT TEST/LANL, REV O	1.2.3.3.1.2.1	NEWBURY	SBT	FLINT	N/O
6R1	8.3.1.2.2.2	WATER MOVEMENT TEST/LANL, REV 1	1.2.3.3.1.2.2	NEWBURY	ESF	FABRYKA-MARTIN	DEF
7	8.3.1.2.2.3	CHAR PERCOL IN UZ-SURFACE BASED STUDY/USGS	1.2.3.3.1.2.2	NEWBURY		FABRYKA-MARTIN	YMPO
8	8.3.1.2.2.4	CHAR YUC MTN PERCO UNSAT ZONE-ESF INVEST/USGS (4,5,7,8,9)	1.2.3.3.1.2.3	NEWBURY	SBT	ROUSSEAU	N/O
8R1	8.3.1.2.2.4	CHAR YUC MTN PERCO UNSAT ZONE-ESF INVEST/USGS (1,2,3,6,1)	1.2.3.3.1.2.4	NEWBURY	ESF	CHORNACK	DEF
9	8.3.1.2.2.5	DIFFUSION TESTS IN ESF/LANL	1.2.3.3.1.2.4	NEWBURY		CHORNACK	*
10	8.3.1.2.2.6	CHAR GAS-PHASE MOVEMENT IN UZ/USGS	1.2.3.3.1.2.5	NEWBURY	ESF	TRIAI	NRC
11	8.3.1.2.2.7	HYDROCHEM CHAR OF UZ/USGS	1.2.3.3.1.2.6	NEWBURY	SBT	CHORNACK	N/O
12	8.3.1.2.2.8	FLUID FLOW IN UNSAT, FRAC ROCK/USGS	1.2.3.3.1.2.7	NEWBURY	SBT	YANG	N/O
13	8.3.1.2.2.9	SITE UZ MODELING & SYNTHESIS/USGS	1.2.3.3.1.2.8	NEWBURY	M	ANNA	NRC
14	8.3.1.2.3.1	CHAR SITE SAT ZONE GRD W FLOW SYS/LANL (7)	1.2.3.3.1.2.9	NEWBURY	M	KWICKLIS	YMPO
15	8.3.1.2.3.1	CHAR SITE SAT ZONE GRD W FLOW SYS.USGS (1-6)	1.2.3.3.1.3.1	NEWBURY		ROBINSON	N/O
14R1		CHAR SITE SAT ZONE GRD W FLOW SYS/LANL (8)	1.2.3.3.1.3.1	NEWBURY	SBT	UMARI	N/O
16	8.3.1.2.3.2	CHAR SAT ZONE HYDROCHEM/USGS	1.2.3.3.1.3.1	NEWBURY		UMARI	*
17	8.3.1.2.3.3	SAT ZONE HYDRO SYSTEM SYNTH AND MODELING/USGS	1.2.3.3.1.3.2	NEWBURY	SBT	STEINKAMPF	NRC
18	8.3.1.3.1.1	GROUND-WATER CHEMISTRY MODEL/LANL	1.2.3.3.1.3.3	NEWBURY	M	ERVIN	YMPO
19	8.3.1.3.2.1	MIN, PET, CHEM OF TRANSPORT PATHWAYS/LANL	1.2.3.3.1	SIMMONS	M	EBINGER	YMPO
20	8.3.1.3.2.2	HIST OF MIN AND GEOCHEM ALT OF YUCCA MTN/LANL	1.2.3.2.1.1.1	SIMMONS	ESF	VANIMAN	N/O
21	8.3.1.3.3.1	NAT ANLOG HYDROTHERM SYS IN TUFF/LLNL	1.2.3.2.1.1.2	SIMMONS	ESF	LEVY	N/O
22	8.3.1.3.3.2	KINETICS AND THERMODYN OF MIN EVOL/LANL	1.2.3.2.1.2.1	SIMMONS	SBT		*
22	8.3.1.3.3.3	CONCEPTUAL MODEL OF MINERAL EVOL/LANL	1.2.3.2.1.2.2	SIMMONS	M	BROXTON	YMPO(1)
24	8.3.1.3.4.1/3	BATCH SORPT STUDIES AND DEVEL SORPT MODELS/LANL	1.2.3.2.1.2.3	SIMMONS	M		YMPO(1)
25	8.3.1.3.4.2	BIOLOGICAL SORPTION & TRANSPORT/LANL	1.2.3.4.1.2.1/3	SIMMONS	M	TRIAI/ROGERS	YMPO(1)
26	8.3.1.3.5.1/2	DISSOLVED SPECIES CONC LIMITS AND COLLOID BEH/LANL	1.2.3.4.1.2.2	SIMMONS	ESF	HERSMAN	YMPO
27	8.3.1.3.6.1	DYNAMIC TRANSPORT COLUMN EXPERIMENTS/LANL	1.2.3.4.1.3.1/3	SIMMONS	M	MORRIS	YMPO
28	8.3.1.3.6.2	DIFFUSION/LANL	1.2.3.4.1.4.1	SIMMONS	M	TRIAI	YMPO(1)
29	8.3.1.3.7.1	RETARDATION SENSITIVITY ANALYSIS/LANL	1.2.3.4.1.4.2	SIMMONS	M	TRIAI	YMPO(1)
30	8.3.1.3.7.2	DEMONSTRATE APPLIC LAB DAT TO REPOS TRANS CALC/ LANL	1.2.3.4.1.5.1	SIMMONS	M	ZYVOLOSKI	NRC
31	8.3.1.3.8.1	GASEOUS RAD TRANS CALCS AND MEASURE/LANL	1.2.3.4.1.5.2	SIMMONS	ESF	SPRINGER	9/93
32	8.3.1.4.2.1	CHAR VERT/LAT DIST STRAT UNITS SITE AREA/USGS(1,2,4)	1.2.3.4.1.6	SIMMONS	SBT	SPRINGER	*
32R1	8.3.1.4.2.1	CHAR VERT/LAT DIST STRAT UNITS SITE AREA/USGS(3,5)	1.2.3.2.2.1.1	WILLIAMS	SBT	SPENGLER	NRC
34	8.3.1.4.2.2	CHAR STRUCTURAL FEATURES W/IN SITE AREA/USGS	1.2.3.5.15*	LONG		SPENGLER	
34R1	8.3.1.4.2.2	2 MORE ACTIVITIES (3,5)/USGS	1.2.3.2.2.1.2	WILLIAMS	ESF	SPENGLER	DEF
35	8.3.1.4.2.3	THREE-DIMENSIONAL GEOLOGIC MODEL/USGS	1.2.3.5.16*	LONG		SPENGLER	NRC
			1.2.3.2.1.3	WILLIAMS	M	SPENGLER	9/93

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ENCLOSURE

506 SIMMONS

Work was completed 11/17/93

## Study Plan Information Sheet

#	SP	SP NAMES/CODE	WBS	WBS	CLASSIFY	PI	STATUS ***
	NUMBER		ELEMENT	MANAGER	SBT, ESP		
					M **		
36	8.3.1.4.3.1	SYST ACQ SITE-SPEC SUBSURF INFO/SNL	1.2.3.2.2.1	WILLIAMS	SBT	RAUTMAN	YMPO
37	8.3.1.4.3.2	THREE-DIMENSIONAL ROCK CHAR MODELS/SNL	1.2.3.2.2.2	WILLIAMS	M	RAUTMAN	12/93
38	8.3.1.5.1.1	CHAR MODERN REGIONAL CLIMATE/USGS	1.2.3.6.2.1.1	CRAWLEY	M	FORESTER	11/92
39	8.3.1.5.1.2	PALEOCLIM STUDY: LAKE, PLAYA, MARSH DEPS/USGS	1.2.3.6.2.1.2	CRAWLEY	SBT	FORESTER	N/O
40	8.3.1.5.1.3	CLIMATIC IMPLICATION TERREST PALEOECOLOGY/USGS	1.2.3.6.2.1.3	CRAWLEY	SBT	FORESTER	N/O
41	8.3.1.5.1.4	ANALYSIS PALEOENVI HIST YUCCA MTN REGION/USGS	1.2.3.6.2.1.4	CRAWLEY	SBT	FORESTER	N/O
42	8.3.1.5.1.5	PALEOCLIM-PALEOENVIRO SYNTHESIS/USGS	1.2.3.6.2.1.5	CRAWLEY	M	FORESTER	1/94
43	8.3.1.5.1.6	CHAR FUTURE REG CLIMATES AND ENVIRONS/SNL	1.2.3.6.2.1.6	CRAWLEY	M	SANDOVAL	YMPO
44	8.3.1.5.2.1	CHAR OF THE QUATERNARY REG HYDRO/USGS(3,4,5)	1.2.3.6.2.2.1	CRAWLEY	SBT	LUCKEY	N/O
44 R2	8.3.1.5.2.1	CHAR OF THE QUATERNARY REG HYDRO/USGS (1)	1.2.3.6.2.2.1	CRAWLEY		GRASSON	YMPO
45	8.3.1.5.2.2	CHAR FUTURE REG HYDRO DUE TO CLI CHANGES/USGS	1.2.3.6.2.2.2	CRAWLEY	M	DOWNEY	YMPO
46	8.3.1.6.1.1	DISTRIB AND CHAR PRESENT AND PAST EROSION/USGS	1.2.3.2.3.1	BJERSTEDT	SBT	WHITNEY	*
47	8.3.1.6.2.1	INFLU FUT CLI COND ON LOC & RATES OF ERO/USGS	1.2.3.2.3.2	BJERSTEDT	M	WHITNEY	*
48	8.3.1.6.3.1	EVAL EFFECT OF FUT TECT ON ERO AT YUC MTN/USGS	1.2.3.2.3.3	BJERSTEDT	M	WHITNEY	*
49	8.3.1.6.4.1	DEV TOPICAL RPT EFFECTS OF ERO ON THE HYDRO, GEOCHEM, AND ROCK CHAR AT YUCCA MTN/USGS	1.2.3.2.3.4	BJERSTEDT	M	WHITNEY	*
50	8.3.1.8.1.1	PROB MAGMATIC ERUPT PENETRATE THE REPOS/LANL	1.2.3.2.5.1.1	COOPER	SBT	CROWE	N/O
51	8.3.1.8.1.2	EFFECTS OF VOL ERUPT PENETRATE REPOS/LANL	1.2.3.2.5.1.2	COOPER	M	CROWE	5/92
52	8.3.1.8.2.1	ANAL WST PKG RUP DUE TO TECT PROC & EVENT/SAIC	1.2.3.2.5.2	SULLIVAN	M	GRANT	YMPO
53	8.3.1.8.3.1	ANAL EFFECTS OF TECT PROC & EVENT ON AVE PERC FLUX RATES OVER REPOS/USGS	1.2.3.2.5.3.1	SULLIVAN	M	FRIDRICH	12/92
54	8.3.1.8.3.2	ANAL EFF OF TECT PROC&EVENT CHGS WTR TBLE ELV/USGS	1.2.3.2.5.3.2	SULLIVAN	M	FRIDRICH	9/93
55	8.3.1.8.3.3	ANAL EFF OF TECT PROC & EVENT ON LOCAL FRAC PERM AND EFFECTIVE POROSITY/USGS	1.2.3.2.5.3.3	SULLIVAN	M	FRIDRICH	2/93
56	8.3.1.8.4.1	ANAL EFF TECT PROC&EVENT ON RK GEOCHEM PROP/USGS	1.2.3.2.5.4	SULLIVAN	M	FRIDRICH	
57	8.3.1.8.5.1	CHAR OF VOLCANIC FEATURES/LANL	1.2.3.2.5.5.1	COOPER	SBT	CROWE	N/O
58	8.3.1.8.5.2	CHAR IGNEOUS INTRUSIVE FEATURES/USGS	1.2.3.2.5.5.2	COOPER	SBT	WHITNEY	7/92
59	8.3.1.8.5.3	INVEST FOLDS IN MIOCENE AND YNG RKS OF REG/USGS	1.2.3.2.5.5.3	COOPER	SBT		9/94
60	8.3.1.9.1.1	EVAL NAT PROC THAT COULD AFFECT LG TERM SURVIVABIL SURFACE MARKER SYS AT YUCCA MTN/M&O	1.2.3.7.1	GIRDLEY	M		4/96
61	8.3.1.9.2.1	NAT RES ASSESS YUCCA MTN, NYE COUNTY/USGS	1.2.3.7.2.1	BERQUIST	SBT		YMPO
62	8.3.1.9.2.2	WATER RES ASSESS YUCCA MTN, NV/SAIC	1.2.3.7.2.2	GIRDLEY	M		N/O
63	8.3.1.9.3.1	EVAL DATA NEEDED TO SUPP ASSESS LIKLIHOOD FUT INADVER HUMAN INTRU YUC MTN EXPLO/EXT NAT RES/M&O	1.2.3.7.3.1	GIRDLEY	M		5/93
64	8.3.1.9.3.2	EVAL POTENTIAL EFFECT OF EXPLOIT NAT RES ON HYDRO CHAR AT YUCCA MTN/M&O	1.2.3.7.3.2	GIRDLEY	M		6/93
65	8.3.1.12.2.1	METEOROLOGICAL DATA COLLECT YUCCA MTN SITE/SAIC	1.2.5.4.2	BEST	SBT		N/O
65 R1	8.3.1.12.2.1	METEOROLOGICAL DATA COLLECT YUCCA MTN SITE/SAIC, REV 1	1.2.5.4.2	BEST			YMPO
66	8.3.1.14.2	STUDIES TO PROVIDE SOIL/ROCK PROP OF POTENTIAL	1.2.3.2.6.2	WILLIAMS	SBT	MCKEOWN	N/O

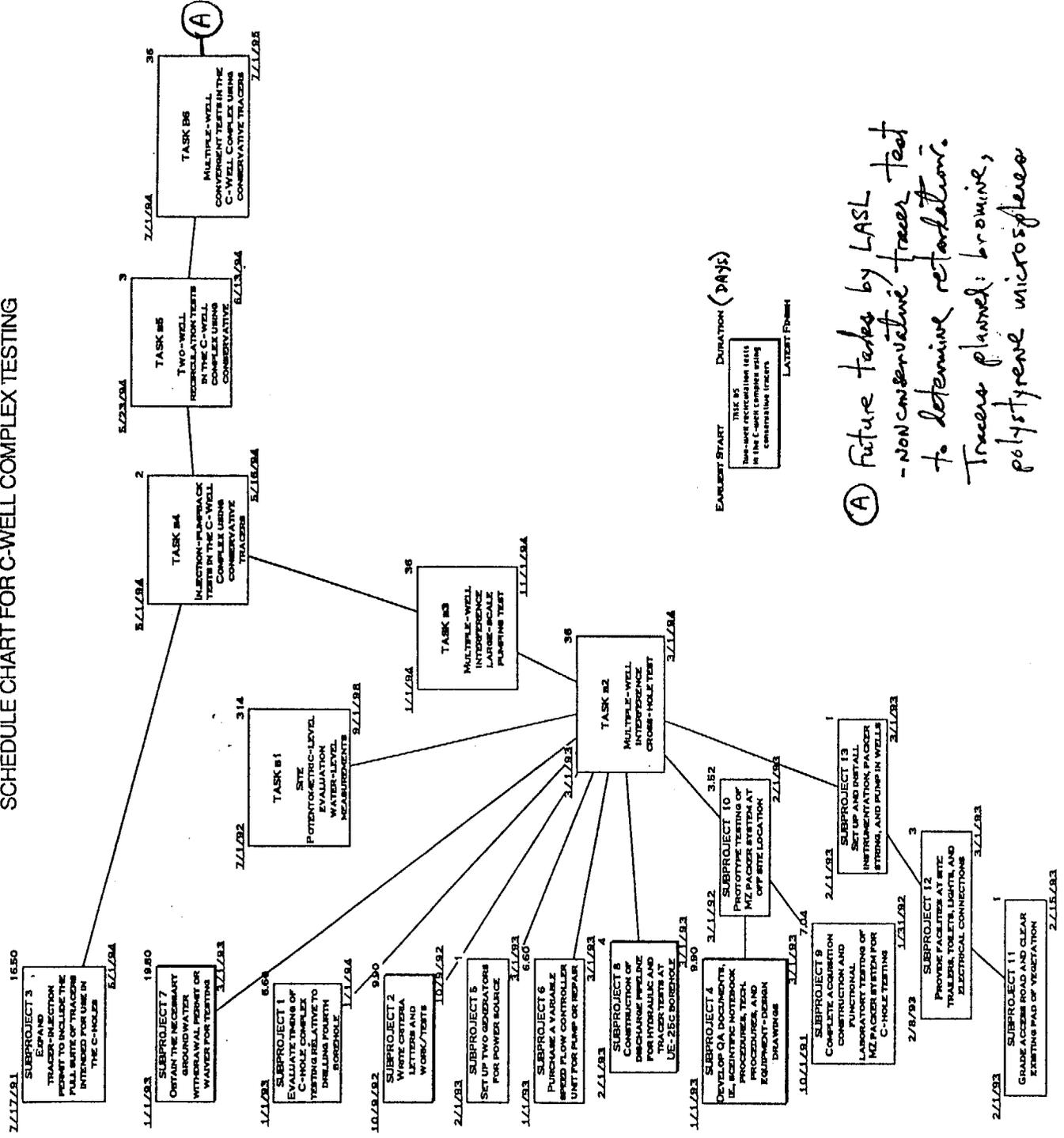
## Study Plan Information Sheet

#	SP NUMBER	SP NAMES/CODE	WBS ELEMENT	WBS MANAGER	CLASSIFY SBT, ESF	PI	STATUS
					M **		
		LOCATIONS OF SURFACE/SUBSURFACE FACILITIES/USGS					
67	8.3.1.15.1.1	LAB THERMAL PROPERTIES/SNL	1.2.3.2.7.1.1	GIRDLEY	ESF	CHOCAS	DEF
68	8.3.1.15.1.2	LAB THERMAL EXPANSION TESTING/SNL	1.2.3.2.7.1.2	GIRDLEY	ESF	CHOCAS	DEF
69	8.3.1.15.1.3	LAB DETERMIN MECH PROP INTACT ROCK/SNL	1.2.3.2.7.1.3	GIRDLEY	ESF	PRICE	DEF
70	8.3.1.15.1.4	LAB DETERMIN MECH PROP FRACTURES/SNL	1.2.3.2.7.1.4	GIRDLEY	ESF	PRICE	YMPO
71	8.3.1.15.1.5	EXCAVATION INVESTIGATIONS/SNL	1.2.4.2.1.1	GIRDLEY	ESF	POTT	DEF
72	8.3.1.15.1.6	IN SITU THERMOMECH PROP/SNL	1.2.4.2.1.1	WHITE	ESF	POTT	9/94
73	8.3.1.15.1.7	IN SITU MECHANICAL PROP/SNL	1.2.4.2.1.1	WHITE	ESF	POTT	9/94
74	8.3.1.15.1.8	IN SITU DESIGN VERIFICATION/SNL	1.2.4.2.1.1	WHITE	ESF	POTT	YMPO(1)
75	8.3.1.15.2.1	CHAR SITE AMBIENT STRESS CONDITIONS/USGS (2)	1.2.3.2.7.2.1	GIRDLEY	ESF	<del>COSTIN</del> ?	DEF
75 R1	8.3.1.15.2.1	CHAR SITE AMBIENT STRESS CONDITIONS/USGS (1)	1.2.3.2.7.2.1	GIRDLEY		COSTIN	9/94
76	8.3.1.15.2.2	CHAR SITE AMBIENT THERMAL COND/USGS	1.2.3.2.7.2.2	GIRDLEY	SBT		9/94
77	8.3.1.16.1.1	CHAR OF FLOOD POTENTIAL YUCCA MTN SITE/USGS	1.2.3.3.2.1	GIRDLEY	SBT	GRASSO	N/O
78	8.3.1.16.2.1	LOC OF ADEQ WATER SUPPLY CONST OPER, CLOS, DECOMM OF A MGDS AT YUCCA MTN/SAIC	1.2.3.3.2.2	GIRDLEY	SBT	KERSCH	6/93
79	8.3.1.16.3.1	DETERMINE PRECLOS HYDRO COND UZ YUCCA MTN/USGS	1.2.3.3.2.3	GIRDLEY	M		95
80	8.3.1.17.1.1	POTENTIAL FOR ASH FALL AT SITE/LANL	1.2.3.2.8.1	SIMMONS	M		*
81	8.3.1.17.2.1	FAULTING POTENTIAL AT REPOSITORY/SAIC	1.2.3.2.8.2	SULLIVAN	M	TBD	*
82	8.3.1.17.3.1	RELEVANT EARTHQUAKE SOURCES/USGS	1.2.3.2.8.3.1	SULLIVAN	M	WHITNEY	N/O
83	8.3.1.17.3.2	UNDERGROUND NUCLEAR EXPLOSION SOURCES/SNL	1.2.3.2.8.3.2	SULLIVAN	M	WALCK	*
84	8.3.1.17.3.3.1	GRD MOTION FROM REG EARTHQUAKE AND UNEs/USGS	1.2.3.2.8.3.3	SULLIVAN	M	WHITNEY	9/93
85	8.3.1.17.3.3.2	GRD MOTION FROM REG EARTHQUAKE AND UNEs/SNL	1.2.3.2.8.3.3	SULLIVAN	M	WALCK	YMPO
86	8.3.1.17.3.4	EFFCT LOCAL SITE GEOL ON SRF&SUBSRF MOTION/USGS	1.2.3.2.8.3.4	SULLIVAN	M	WHITNEY/BRUNE	N/O
87	8.3.1.17.3.5	GRD MOTION AT SITE FROM CONTROL SEIS EVENT/USGS	1.2.3.2.8.3.5	SULLIVAN	M	WHITNEY	YMPO
88	8.3.1.17.3.6	PROBABILISTIC SEISMIC HAZARD ANALYSES/USGS	1.2.3.2.8.3.6	SULLIVAN	M	WHITNEY	9/93
89	8.3.1.17.4.1	HISTORICAL AND CURRENT SEISMICITY/USGS	1.2.3.2.8.4.1	SULLIVAN	SBT	BRUNE(UNR)	N/O
90	8.3.1.17.4.2	LOC & RECENCY OF FAULT NEAR PROSPEC SUR FACIL/USGS	1.2.3.2.8.4.2	SULLIVAN	SBT	SWAN	N/O
91	8.3.1.17.4.3	QT FLT 100KM YUCCA MTN, INCL WALKER LANE/USGS	1.2.3.2.8.4.3	SULLIVAN	SBT	ANDERSON (USBR)	YMPO
92	8.3.1.17.4.4	QUAT FAULT PROXIMAL TO SITE W/IN NE-TREND FAULT ZONES/USGS	1.2.3.2.8.4.4	SULLIVAN	SBT	O'LEARY	YMPO
93	8.3.1.17.4.5	DETACH FAULTS AT OR PROX TO YUCCA MTN/USGS	1.2.3.2.8.4.5	SULLIVAN	SBT	WHITNEY	NRC
94	8.3.1.17.4.6	QUAT FAULTING W/IN SITE AREA/USGS	1.2.3.2.8.4.6	SULLIVAN	SBT	WHITNEY	N/O
95	8.3.1.17.4.7	SUBSUR GEOMET AND CONCEALED EXTEN OF QUAT FAULTS AT YUCCA MTN/USGS	1.2.3.2.8.4.7	SULLIVAN	SBT	WHITNEY	9/93
96	8.3.1.17.4.8	STRESS FIELD WITHIN/PROX TO SITE AREA/USGS	1.2.3.2.8.4.8	SULLIVAN	SBT	WHITNEY	9/94
97	8.3.1.17.4.9	TECT GEOMORPH YUCCA MTN REG/USGS	1.2.3.2.8.4.9	SULLIVAN	SBT	WHITNEY	9/93
98	8.3.1.17.4.10	GEODETIC LEVELING/USGS-GD	1.2.3.2.8.4.10	SULLIVAN	SBT	WHITNEY	N/O
99	8.3.1.17.4.11	CHAR REG LATERAL CRUSTAL MOVEMENT/USGS	10.2.3.2.8.4.11	SULLIVAN	SBT	WHITNEY	9/94
100	8.3.1.17.4.12	TECTONIC MODELS AND SYSTHESIS/USGS	1.2.3.2.8.4.12	SULLIVAN	M	O'LEARY	9/92
101	8.3.3.2.2.1	SEAL MATERIAL PROPERTIES DEVELOPMENT/SNL	1.2.4.6	WHITE	M	FERNANDEZ	9/93

## Study Plan Information Sheet

#	SP NUMBER	SP NAMES/CODE	WBS ELEMENT	WBS MANAGER	CLASSIFY SBT, ESF M**	PI	STATUS***
102	8.3.4.2.4.1	CHAR CHEM AND MIN CHANGES POSTEMPLAC ENVIRO/LLNL	1.2.2.2.1	HARRISON	M	GLASSLEY	YMPO(1)
103	8.3.4.2.4.2	HYDRO PROP OF WASTE PKG ENVIRO/LLNL	1.2.2.2.2	HARRISON	M	BUSCHECK	YMPO(1)
104	8.3.4.2.4.3	MECH ATTRIBUTES OF WASTE PKG ENVIRO/LLNL	1.2.2.2.3	HARRISON	ESF	BLAIR	YMPO
105	8.3.4.2.4.4	ENG BARRIER SYSTEM FIELD TESTS/LLNL	1.2.2.2.4	HARRISON	ESF	LIN	1/95
** : CLASSIFY SBT, ESF AND M							
	SBT - SURFACE-BASED TESTING RELATED STUDY PLAN						
	ESF - EXPLORATORY STUDIES FACILITY RELATED STUDY PLAN						
	M - MODELING RELATED STUDY PLAN						
*** : STATUS:							
	N/O - NRC PHASE I REVIEW FOUND NO OBJECTIONS						
	NRC-AT NRC AWAITING PHASE I REVIEW						
	DEF - NRC DEFERRED PHASE I REVIEW BECAUSE STUDY IS ESF RELATED						
	YMPO-UNDER YMPO REVIEW						
	YMPO(1), STUDY PLAN IN PI REVISION MORE THAN 1 YEAR						
	DATE-PROPOSED SUBMITTAL DATE FOR YMPO REVIEW						
	*- NO SPECIFIED SUBMITTAL DATE						

# SCHEDULE CHART FOR C-WELL COMPLEX TESTING



Ⓐ Future takes by LASL - NON conservative tracer test to determine retardation. Tracers planned: bromine, polystyrene microspheres

rec'd 1/12/93 from C. Newbery - PSJ



Department of Energy  
Yucca Mountain Site Characterization  
Project Office  
P. O. Box 98608  
Las Vegas, NV 89193-8608

WBS 1.2.3  
QA: N/A

DEC 22 1992

Willis L. Clarke, LLNL, Livermore, CA  
Larry R. Hayes, USGS, Las Vegas, NV  
Julie A. Canepa, LANL, Los Alamos, NM  
Les E. Shephard, SNL, 6310, Albuquerque, NM  
Michael D. Voegele, SAIC, Las Vegas, NV  
Robert F. Pritchett, REECO, Las Vegas, NV  
Richard L. Bullock, RSN, Las Vegas, NV  
L. Dale Foust, M&O/TRW, Las Vegas, NV

GEOPHYSICS INTEGRATION TASK FORCE (GITF): REQUEST FOR INFORMATION

Effective integration and coordination of the various geophysics-related testing techniques and tools within the overall geotechnical site characterization program requires systematic long range planning of geophysical and related non-geophysical activities. In accordance with the Site Characterization Plan (December 1988), Activity 8.3.1.4.1.2, the GITF has been established within the Yucca Mountain Site Characterization Project (YMP) to assist in the integration, coordination, and planning of the testing program (enclosure 1). The GITF will assist in providing:

1. A forum for discussion of various aspects of the technical program pertaining to appropriateness of a technique for intended purpose, calibration, processing, interpretation pitfalls, and cross-discipline and cross-study applications.
2. Input for test prioritization and planning efforts.
3. A focus for test integration, coordination, scheduling, and the determination of the need for each test, and the adequacy of the test to address the questions of site suitability and issue resolution. This function would include providing a review function for proposed changes to the Site Characterization Program Baseline (SCPB).
4. A monitoring function including oversight for scheduling, funding, and the development of products (and their use) in the field testing activities, data analysis and data disposition.
5. Assistance in preparation of geophysics-related technical briefings for project oversight and regulatory bodies, and scoping for resolution of Site Characterization Analysis and the study plan open items with the U.S. Nuclear Regulatory Commission (NRC). A technical exchange with the NRC concerning the geophysics integration initiative is scheduled for June 8, 1992, here in Las Vegas.
6. Assistance in the development of geophysics-related documents addressing questions of site suitability and issue resolution.

WBS 1.2.3 / MGMT / 1  
93-1498  
12/22/92

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Multiple Addressees

-2-

The GITF will coordinate development of several planning documents as part of its integration function. The GITF will be examining each completed and proposed subsurface (Exploratory Studies Facility [ESF] related) and surface-based geophysical test, and all proposed borehole geophysical logging. Much of the information the Yucca Mountain Site Characterization Project Office (YMPO) is requesting can be extracted from existing documents such as the Mission 2001 document, Planning and Control System, annual plans, or other project or participant planning documents; some cannot be obtained so easily. Participant assistance is required for YMPO to properly manage and administer elements of the testing program.

Therefore, YMPO requests that the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) assist the participants in providing to the GITF the following information required for start of integration and coordination efforts, and in preparation for the June technical exchange with the NRC:

1. FISCAL YEARS (FY) 1993, 1994 - PROPOSED GEOPHYSICAL TESTS:

Develop a tabulation of all individual "proposed" geophysical tests (use enclosure 2) to be conducted by your organization during fiscal year (FY) 1993 and FY 1994. The CRWMS M&O will be preparing a draft of this spreadsheet by February 1, 1993. Participants are requested to prepare their own spreadsheet and work with CRWMS M&O representatives during February to complete the tables. Please arrange individual tests in chronological order and provide an indication of test priority, to the extent possible. Include similar tabulation for all on-going individual geophysical testing activities. Borehole geophysical logging aspects of the program are being coordinated through Science Applications International Corporation (SAIC) logging coordinator, and information will be provided to CRWMS M&O. Borehole geophysical logging will be treated on a well-by-well basis as an individual test, and will include reference to each borehole geophysical log intended to be run in each borehole. Feasibility geophysical tests should be clearly identified, and comments made on scheduling of follow-up testing planned by staff. (Scheduling of follow-up studies should assume success of feasibility test; please reference feasibility test for each follow-up test.) This information is due in February 1993.

2. FISCAL YEARS 1995 TO 1999 - PROPOSED GEOPHYSICAL TESTS:

As in 1 above, but for "proposed" tests scheduled to be conducted during FYs 1995-1999 (use enclosure 3). The CRWMS M&O assist participants in completion of the spreadsheets during February 1993 and will provide the GITF with the final compilation. The CRWMS M&O will then assist the GITF in development of presentation format based on participant input. This information is due February 1993.

3. NEW PROPOSALS FOR GEOPHYSICAL TESTING:

Most major aspects of the testing program were defined two to four years ago. Participant organizations have had several years of experience beyond those earlier planning phases of the project. Recognizing the potential for new applications for geophysical testing, or improved geophysical techniques, please provide a prioritized listing of such potential new geophysical tests. Include a brief summary (use enclosure 4) regarding the nature of the newly proposed geophysical activity, or proposed work scope and schedule, application and purpose of proposed test with description of information feeds (test linkage) for the various existing study plans (assessments, models, etc., included), and information concerning organizations and individuals intending to conduct newly proposed tests. Identify existing study plan where activity could be added to currently proposed work; alternatively, indicate if new study plan description must be added to baseline document, SCPB. Provide brief description of test application in determination of site suitability. This information is required by February 20, 1993.

4. GEOPHYSICAL TESTS COMPLETED AFTER JUNE 1990:

Participants are requested to work with the GITF and CRWMS M&O in the development of a GITF catalog and folio (see enclosure 5) of "completed" (those tests completed after June 1, 1990) geophysical tests. This catalog will have the same structure as the above described "planned" geophysical test catalog, but will include executive summaries of completed test results. Summaries of applications for test results, information feeds for other nongeophysical testing will be described, and significance in terms of model development and assessments outlined by participants for each test. Within 3 months (when possible) of the completion of each geophysical test, the responsible scientist should provide the GITF with test summary information, analysis, and preliminary interpretations. Please submit copies of all published articles and abstracts to the GITF. Any subsequent testing or modifications to test analysis or interpretation should be supplied to the GITF in a timely manner for inclusion in the catalog and folio of completed work. This document should be initiated by CRWMS M&O from participant input to the GITF as soon as practicable.

5. GEOPHYSICAL TESTING COMPLETED BEFORE JUNE 1990:

As in number 4 above, but for all geophysical tests completed prior to June 1990 (use enclosure 6). Indicate whether or not the data are qualified, or describe steps to be taken to assure data qualification, if such data qualification is warranted. For each geophysical test, provide brief statement describing possible reasons for success or failure of the test, including analysis of data collection methods, data processing, and interpretation of results. Provide brief statement regarding recommended actions to improve data quality or results of future similar tests. Participants are expected to supply input for development of this document by July 1, 1993, and CRWMS M&O should have final catalog and folio of previous geophysical testing available by September 1, 1993.

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6. EXECUTIVE SUMMARY OF GEOPHYSICAL TESTING:

Information provided (for items 1, 2, and 3 above) by participant organizations will be developed into an executive summary by CRWMS M&O for the GITF by March 15, 1993, and will be utilized by CRWMS M&O in the development of testing catalogs. Tabulations and catalogs will be used to assist in project planning and management, and in the development of test planning packages during the coming years.

7. ANNUAL UPDATES:

The above requested items (numbers 1, 2, and 3) are to be updated on an annual basis (annually due by February 1, 1994-1998) by participants and provided to the GITF for input to CRWMS M&O. Thus, catalogs developed by CRWMS M&O will constitute evolving documents reflecting changes and input submitted by participants.

8. PRESENTATIONS:

The GITF will be organizing several meetings and presentations for geophysics-related testing programs during the coming months. Your cooperation in assisting them with this aspect of the geophysics integration initiative is greatly appreciated. The GITF requests that the U.S. Geological Survey (USGS) Technical Project Officer (TPO) arrange for a one to two day briefing on completed and proposed geophysical testing, to be presented by research staff from Menlo Park (or from other sites), and that interested principal investigators from all participant organizations be advised of the opportunity to attend the seminar. The GITF requests that the seminar take place during early February 1993, if possible.

9. REQUEST FOR NOTIFICATION:

The GITF is to be informed one week in advance of the onset of all field geophysical testing, and upon completion of the test. Please contact GITF chairperson or members listed below.

10. QUALIFICATION OF "OLD" DATA:

Provide the GITF with an update regarding status of your efforts to incorporate (and or qualify) existing geophysical (pre-1991) data into the current site characterization program. (This task constitutes a portion of requested information in item 5 above.) Summary and update for item 10 is due March 1, 1993.

11. ORGANIZATION CHARTS:

Please provide the GITF with summary organization charts and listings of all staff members assigned to Yucca Mountain geophysical testing related programs. Please indicate the percent of time dedicated to YMP for each

DEC 22 1992

staff member. Indicate staff member specialty and provide identification of geophysical tasks assigned to each staff member or group. Include same summary information for all subcontracted consulting groups as separate listing. Submit this information to the GITF chairperson (Mark Tynan) before January 7, 1993.

All documents created by or for the GITF will be nonquality affecting documents, and are intended for management and planning purposes only. Questions regarding this request should be directed to geophysical coordinators (GITF panel members) listed herein. Any changes to the GITF membership will be forwarded to TPOs. The GITF will provide progress reports to TPOs as warranted throughout site characterization. The following people constitute the current GITF panel:

Ronald D. Oliver	Los Alamos National Laboratory	(702) 794-7095
Debra Edwards	USGS	(702) 794-7088
Forrest D. Peters	SAIC	(702) 794-7753
Charles M. Schlinger	SAIC	(702) 794-7440
James D. Agnew	CRWMS M&O	(702) 794-1853
Mark C. Tynan	YMPO (Chairperson)	(702) 794-7940

Participant cooperation in this effort is greatly appreciated. Synthesis of information related to ESF/subsurface testing will be coordinated through Ronald D. Oliver and the CRWMS M&O representative James D. Agnew. It is hoped that this exercise will contribute to the success of our testing program through the enhancement of our ability to administer a very complex site characterization project.

*for*   
J. Russell Dyer, Director  
Regulatory & Site Evaluation Division

RSED:MCT-1498

## Enclosures:

1. Geophysics Integration  
Task Force Charter
2. FY 1993-1994 Proposed  
Geophysics Tests
3. FY 1995-1999 Proposed  
Geophysical Tests
4. New Proposals for Geophysical  
Testing
5. Geophysical Tests Completed  
After June 1990
6. Geophysical Tests Completed  
Before June 1990

Multiple Addressees

-6-

DEC 22 1992

cc w/encls:

H. W. Oliver, USGS, Menlo Park, CA  
P. H. Nelson, USGS, Denver, CO  
R. W. Spengler, USGS, Denver, CO  
J. W. Whitney, USGS, Denver, CO  
C. J. Fridrich, USGS, Denver, CO  
Debra Edwards, USGS, Las Vegas, NV  
Greg Valentine, LANL, Los Alamos, NM  
D. E. Broxton, LANL, Los Alamos, NM  
B. M. Crowe, LANL, Las Vegas, NV  
R. D. Oliver, LANL, Las Vegas, NV  
J. E. York, Weston, Washington, DC  
L. E. Thompson, SAIC, Las Vegas, NV  
F. D. Peters, SAIC, Las Vegas, NV  
C. M. Schlinger, SAIC, Las Vegas, NV  
J. D. Agnew, M&O/WCFS, Las Vegas, NV  
R. C. Quittmeyer, M&O/WCFS, Las Vegas, NV  
Frank Perry, University of New Mexico, Albuquerque, NM

cc w/o encls:

S. J. Brocoum, HQ (RW-22) FORS  
R. W. Craig, USGS, Las Vegas, NV  
J. A. Blink, LLNL, Las Vegas, NV  
N. Z. Elkins, LANL, Las Vegas, NV

## CHARTER FOR THE GEOPHYSICS INTEGRATION TASK FORCE

The Geophysics Integration Task Force (GITF) is a chartered entity within the Regulatory & Site Evaluation Division (RSED). The GITF will provide a forum for the consideration, integration, coordination, planning and execution of all geophysics-related activities for the Yucca Mountain Site Characterization Project (YMP) surface based testing program.

Initially, the GITF will request participant organizations to assist in the tabulation and assessment of the purpose, cost, schedule, staffing, priority, and technical need for each proposed geophysics-related test (including borehole geophysics) presented in the Site Characterization Program Baseline (SCPB) document.

Participant organizations will be requested to provide a synthesis and update of completed geophysical work; documentation will include interpretive executive summaries and proposals for any additional technical work not covered by current study plans.

The Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) will be requested to integrate participant input in preparation of the final tables and flow charts to be presented to the GITF as a test integration summary.

After development of the test integration summary, the GITF will coordinate the consideration of linkage between each geophysical test and their relationship and potential contribution to other geophysical and nongeophysical testing programs within the scope of the overall site characterization project. These testing programs will include (but are not limited to) structural geology, tectonics, earthquake hazard analysis, design and testing, hydrology, volcanism, economic geology, and drilling.

The GITF will further coordinate the evaluation of the technical need and technical adequacy of each scheduled geophysical test with respect to resolution of questions related to site suitability, license application, and issue resolution. The GITF will establish target dates for testing and deliverables required to address these questions.

Participant and nonparticipant technical specialists may be contacted to assist in the analysis of questions related to the technical adequacy of proposed tests.

The GITF will monitor all geophysical testing throughout the site characterization effort. This is to include the monitoring of data collection, data analysis, application of data to other site characterization studies, analysis of data and reports generated by participants, and oversight of the disposition and archiving of all technical data and reports.

The GITF will meet at least quarterly (or as deemed necessary by the chairperson) on a continuing basis throughout the site characterization phase of the project, and will provide input for annual planning exercises to the Yucca Mountain Site Characterization Project Office (YMPO).

The GITF will consist of the geophysical testing coordinators from each of the following organizations as indicated:

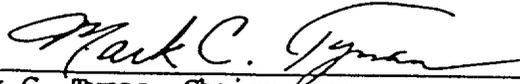
1. YMPO (1 member: chairperson).
2. Technical and Management Support Services (one member).
3. CRWMS M&O (one member).
4. U.S. Geological Survey (one member).

Additional members (possibly from other project geophysical testing related organizations) may be added to the task force as deemed appropriate in the future. GITF membership should provide representation for project participants involved in major geophysics-related research.

The chairperson of the GITF will be one of the YMPO representatives. GITF members will provide the chairperson with suggestions, but the chairperson alone will define all final recommendations to be submitted to the RSED Division Director for disposition. Recommendations to the RSED Division Director may include potential test modification or reprioritization plans, and will address both scheduling and funding impacts to the planned Site Characterization Program. The GITF will coordinate with other committees involved with test planning within the Yucca Mountain Site Characterization Project and with the Regulatory Interactions Branch to ensure that modification of SCPB and study plans are properly coordinated.

  
\_\_\_\_\_  
J. Russell Dyer, Director  
Regulatory & Site Evaluation Division

10/27/92  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Mark C. Tynan, Chairperson  
Geophysics Integration Task Force

10/26/92  
\_\_\_\_\_  
Date























DEC 22 1992

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DEC 22 1992

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James D. Agnew	CRWMS M&O	(702) 794-1853
Mark C. Tynan	YMPO (Chairperson)	(702) 794-7940

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**"ORIGINAL SIGNED BY"**

*J. TIMONTHY SULLIVAN*

*J.R.* Russell Dyer, Director  
Regulatory & Site Evaluation Division

RSED:MCT-1498

Enclosures:

1. Geophysics Integration  
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5. Geophysical Tests Completed  
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Multiple Addressees

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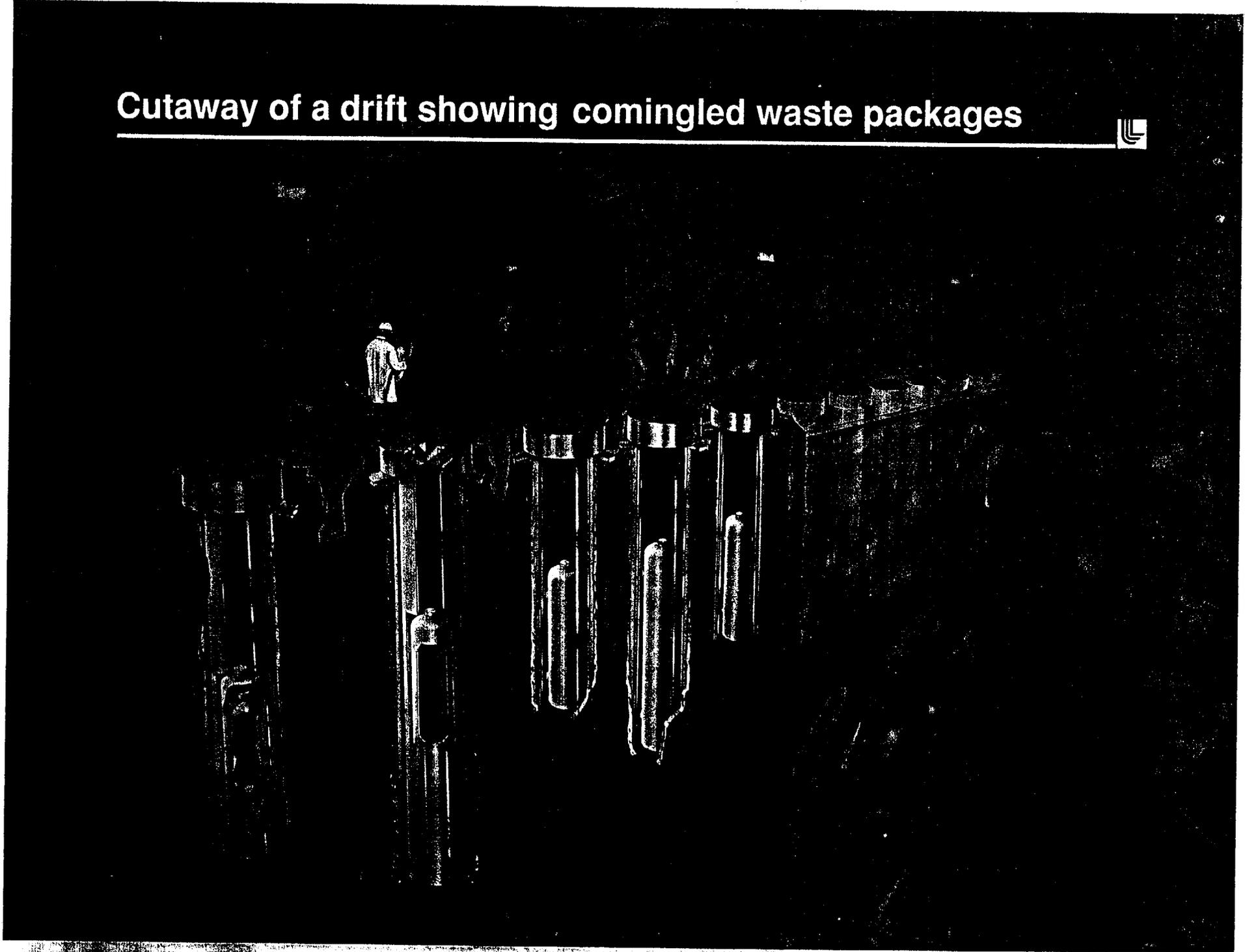
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H. W. Oliver, USGS, Menlo Park, CA  
P. H. Nelson, USGS, Denver, CO  
R. W. Spengler, USGS, Denver, CO  
J. W. Whitney, USGS, Denver, CO  
C. J. Fridrich, USGS, Denver, CO  
Debra Edwards, USGS, Las Vegas, NV  
Greg Valentine, LANL, Los Alamos, NM  
D. E. Broxton, LANL, Los Alamos, NM  
B. M. Crowe, LANL, Las Vegas, NV  
R. D. Oliver, LANL, Las Vegas, NV  
J. E. York, Weston, Washington, DC  
L. E. Thompson, SAIC, Las Vegas, NV  
F. D. Peters, SAIC, Las Vegas, NV  
C. M. Schlinger, SAIC, Las Vegas, NV  
J. D. Agnew, M&O/WCFS, Las Vegas, NV  
R. C. Quittmeyer, M&O/WCFS, Las Vegas, NV  
Frank Perry, University of New Mexico, Albuquerque, NM

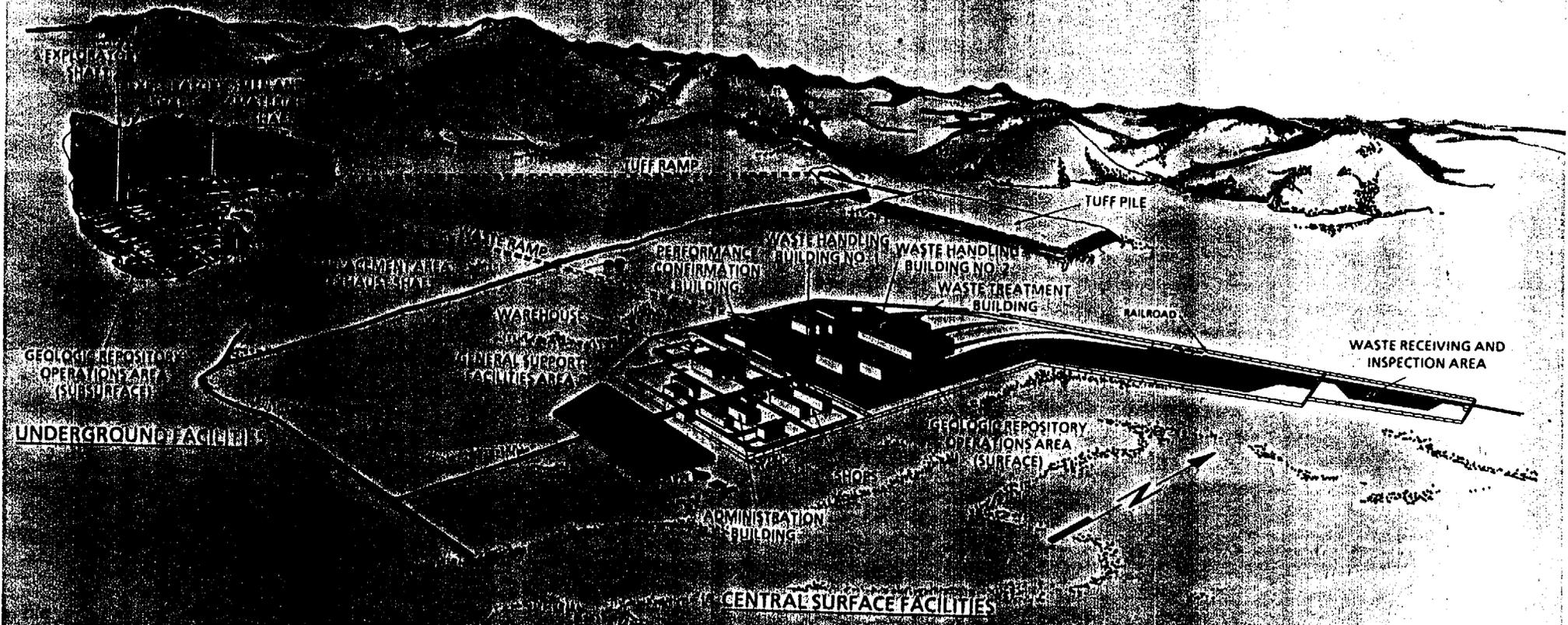
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S. J. Brocoum, HQ (RW-22) FORS  
R. W. Craig, USGS, Las Vegas, NV  
J. A. Blink, LLNL, Las Vegas, NV  
N. Z. Elkins, LANL, Las Vegas, NV

# Cutaway of a drift showing comingled waste packages



# PRELIMINARY DRAWING OF A REPOSITORY COMPLEX

























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YMP-92-151.2:  
YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT  
PROPOSED 1992 SEISMIC  
REFLECTION PROFILES  
SOUTHEAST AREA**

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YMP-92-151.2**

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NORTHEAST AREA**

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**YMP-92-152.2:**

**YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT  
PROPOSED 1992 SEISMIC  
REFLECTION PROFILES  
SOUTHWEST AREA**

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YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT  
PROPOSED 1992 SEISMIC  
REFLECTION PROFILES  
NORTHWEST AREA**

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YMP-92-153.1**

**NOTE:** Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

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