OCT 15 1987

102/CEA/10/5/87

OFFICIAL CONCURRENCE AND DISTRIBUTION RECORD

MEMORANDUM FOR: King Stablein, Program Manager, NNWSI
Operations Branch
Division of High-Level Waste Management, NMSS

FROM: Charlotte Abrams
Geology/Geophysics Section
Technical Review Branch
Division of High-Level Waste Management, NMSS

SUBJECT: ONE DAY FIELD TRIP TO YUCCA MOUNTAIN, 9/24/87

DATE:

DISTRIBUTION

HLWM/SF	NMSS RF	RBrowning, HLWM
MBell, HLWM	Youngblood, HLOB	RBallard, HLTR
CAbrams, HLTR &RF	PJustus, HLTR	HLTR RF
PDR	KMcConnell, HLTR	PBembia, HLTR
Jtrapp, HLTR	PPrestholt, OR	

CONCURRENCES

ORGANIZATION/CONCUREE	INITIALS	DATE CONCURRED
HLTR/CAbrams	CA	87/10/9
HLTR/KMcConnell	KMcC	87/10/13
HLTR/PBembia	PB	87/10/13
OR/PPrestholt	PP	87/10/9

OCT 15 1987

102/CEA/10/5/87

MEMORANDUM FOR: King Stablein, Program Manager, NNWSI
Operations Branch
Division of High-Level Waste Management, NMSS

FROM: Charlotte Abrams
Geology/Geophysics Section
Technical Review Branch
Division of High-Level Waste Management, NMSS

SUBJECT: ONE DAY FIELD TRIP TO YUCCA MOUNTAIN, 9/24/87

On September 22-23, 1987, members of the NRC staff attended a DOE briefing on the NNWSI Project seismic/tectonic site characterization plan strategies (see summary). As a post meeting trip, on September 24, 1987, NRC staff (Keith McConnell, Charlotte Abrams, Paul Bembia, and King Stablein) and Larry McKague (LLNL, NRC consultant) visited the proposed Yucca Mountain HLW site. Stops included (attachment 1):

1) Top of Yucca Mountain From the north end of the mountain along the crest field trippers viewed the trace of the Solitario Canyon fault to the west and Calico Hills and location of the surface facilities to the east. We then drove along the crest of Yucca Mountain to the southern end where the group examined an outcrop of the Tiva Canyon Member of the Paintbrush Tuff and viewed Bare Mountain, the trace of the Solitario Canyon fault and basaltic cones in Crater Flat located to the west of the mountain and the Lathrop Wells basaltic cone located at the southern end of the mountain.

2) Location of exploratory shaft facilities Stops at the site of the exploratory shaft facilities, the top of Yucca Mountain, and trench 14 (stop 4) were made chiefly for the benefit of Paul Bembia (Geochemistry Section) who was making his first visit to the site. At this location the group observed the proposed locations for the exploratory and ventilation shafts.

3) Excavation near southern end of Exile Hill At the southern end of Exile Hill a test excavation located in tuff was examined by the group. The excavation is approximately 12 feet in diameter and 12 feet deep. Rock exposed is highly fractured as is much of the surface exposure surrounding the excavation. Some fracturing within the opening may result from excavation measures, but the surrounding exposures indicate that the fracturing, for a large part, was preexisting.

4) Trench 14 At trench 14 the group examined the calcite-silica veining, ash within the veins, and breccia filling. In trench 14a the group examined tuff with a reddish color that appears to have been altered.

5) Ghost Dance fault The group then climbed Whale Back Ridge and with the aid of the map of Scott and Bonk (USGS OFR 84-494) visited the location where the Ghost Dance fault crosses that ridge. At that location (attachment 2)

the fault appears to be marked by approximately north-south trending fractures. Notches or breaks in outcrop on ridges located to the north and south of Whale Back Ridge were interpreted by the group to define the trend of the fault.

6) Trench 4B Trench 4B is located along the trend of the Ghost Dance fault and may cross that fault in Split Wash (?). The approximately east-west trending trench is approximately 40 meters in length and is located in alluvium/colluvium within a steep wash. No distinct evidence for faulting was observed, but trenched materials contained no coatings and may be deposited too recently to contain evidence for early or recent faulting.

Due to time limitations the group was unable to visit trenches 16a and 16b as originally planned. These trenches are reported (Ken Fox, USGS, meeting presentation, 9/22/87) to contain carbonate deposits and should be examined on a future visit to the site.

While visiting the site the group met two representatives of REECO who had the task of checking locations, cataloging, and placing locks on all wells at the site. Due to the establishment of the new Bullfrog County, the Nye County sheriff no longer will patrol the wells or site facilities and these duties may be taken over by the DOE.

ORIGINAL SIGNED BY

Charlotte Abrams
Geology/Geophysics Section
Technical Review Branch
Division of High-Level Waste Management, NMSS

Mapped by the Army Map Service
Published for civil use by the Geological Survey
Control by USC&GS and USCE
Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1952. Field check 1952


Attachment 2
TEAL
RIDGE
WASH
DRILL
WASH
RIDGE
CREST
DIABOLUS
RIDGE
HOLE
WASH
WREN
WASH
YUCCA
RIDGE
DEAD
COYOTE
WASH
LIVE
YUCCA
RIDGE
USW G-1
USW H-1
USW H-3
USW G-4
UE25a-4
UE25a-5
UE25a-6
UE25a-7
UE25b-1H
4300
4200
4100
4000
3900
3800
3700

OCT 15 1987

102/CEA/10/5/87

OFFICIAL CONCURRENCE AND DISTRIBUTION RECORD

MEMORANDUM FOR: King Stablein, Program Manager, NNWSI
Operations Branch
Division of High-Level Waste Management, NMSS

FROM: Charlotte Abrams
Geology/Geophysics Section
Technical Review Branch
Division of High-Level Waste Management, NMSS

SUBJECT: ONE DAY FIELD TRIP TO YUCCA MOUNTAIN, 9/24/87

DATE:

DISTRIBUTION

HLWM/SF	NMSS RF	RBrowning, HLWM
MBell, HLWM	Youngblood, HLOB	RBallard, HLTR
CAbrams, HLTR &RF	PJustus, HLTR	HLTR RF
PDR	KMcConnell, HLTR	PBembia, HLTR
Jtrapp, HLTR	PPrestholt, OR	

CONCURRENCES

ORGANIZATION/CONCUREE	INITIALS	DATE CONCURRED
HLTR/CAbrams	CA	87/10/9
HLTR/KMcConnell	KM	87/10/13
HLTR/PBembia	PB	87/10/13
OR/PPrestholt	PP	87/10/9

OCT 15 1987

102/CEA/10/5/87

MEMORANDUM FOR: King Stablein, Program Manager, NNWSI
Operations Branch
Division of High-Level Waste Management, NMSS

FROM: Charlotte Abrams
Geology/Geophysics Section
Technical Review Branch
Division of High-Level Waste Management, NMSS

SUBJECT: ONE DAY FIELD TRIP TO YUCCA MOUNTAIN, 9/24/87

On September 22-23, 1987, members of the NRC staff attended a DOE briefing on the NNWSI Project seismic/tectonic site characterization plan strategies (see summary). As a post meeting trip, on September 24, 1987, NRC staff (Keith McConnell, Charlotte Abrams, Paul Bembia, and King Stablein) and Larry McKague (LLNL, NRC consultant) visited the proposed Yucca Mountain HLW site. Stops included (attachment 1):

1) Top of Yucca Mountain From the north end of the mountain along the crest field trippers viewed the trace of the Solitario Canyon fault to the west and Calico Hills and location of the surface facilities to the east. We then drove along the crest of Yucca Mountain to the southern end where the group examined an outcrop of the Tiva Canyon Member of the Paintbrush Tuff and viewed Bare Mountain, the trace of the Solitario Canyon fault and basaltic cones in Crater Flat located to the west of the mountain and the Lathrop Wells basaltic cone located at the southern end of the mountain.

2) Location of exploratory shaft facilities Stops at the site of the exploratory shaft facilities, the top of Yucca Mountain, and trench 14 (stop 4) were made chiefly for the benefit of Paul Bembia (Geochemistry Section) who was making his first visit to the site. At this location the group observed the proposed locations for the exploratory and ventilation shafts.

3) Excavation near southern end of Exile Hill At the southern end of Exile Hill a test excavation located in tuff was examined by the group. The excavation is approximately 12 feet in diameter and 12 feet deep. Rock exposed is highly fractured as is much of the surface exposure surrounding the excavation. Some fracturing within the opening may result from excavation measures, but the surrounding exposures indicate that the fracturing, for a large part, was preexisting.

4) Trench 14 At trench 14 the group examined the calcite-silica veining, ash within the veins, and breccia filling. In trench 14a the group examined tuff with a reddish color that appears to have been altered.

5) Ghost Dance fault The group then climbed Whale Back Ridge and with the aid of the map of Scott and Bonk (USGS OFR 84-494) visited the location where the Ghost Dance fault crosses that ridge. At that location (attachment 2)

the fault appears to be marked by approximately north-south trending fractures. Notches or breaks in outcrop on ridges located to the north and south of Whale Back Ridge were interpreted by the group to define the trend of the fault.

6) Trench 4B Trench 4B is located along the trend of the Ghost Dance fault and may cross that fault in Split Wash (?). The approximately east-west trending trench is approximately 40 meters in length and is located in alluvium/colluvium within a steep wash. No distinct evidence for faulting was observed, but trenched materials contained no coatings and may be deposited too recently to contain evidence for early or recent faulting.

Due to time limitations the group was unable to visit trenches 16a and 16b as originally planned. These trenches are reported (Ken Fox, USGS, meeting presentation, 9/22/87) to contain carbonate deposits and should be examined on a future visit to the site.

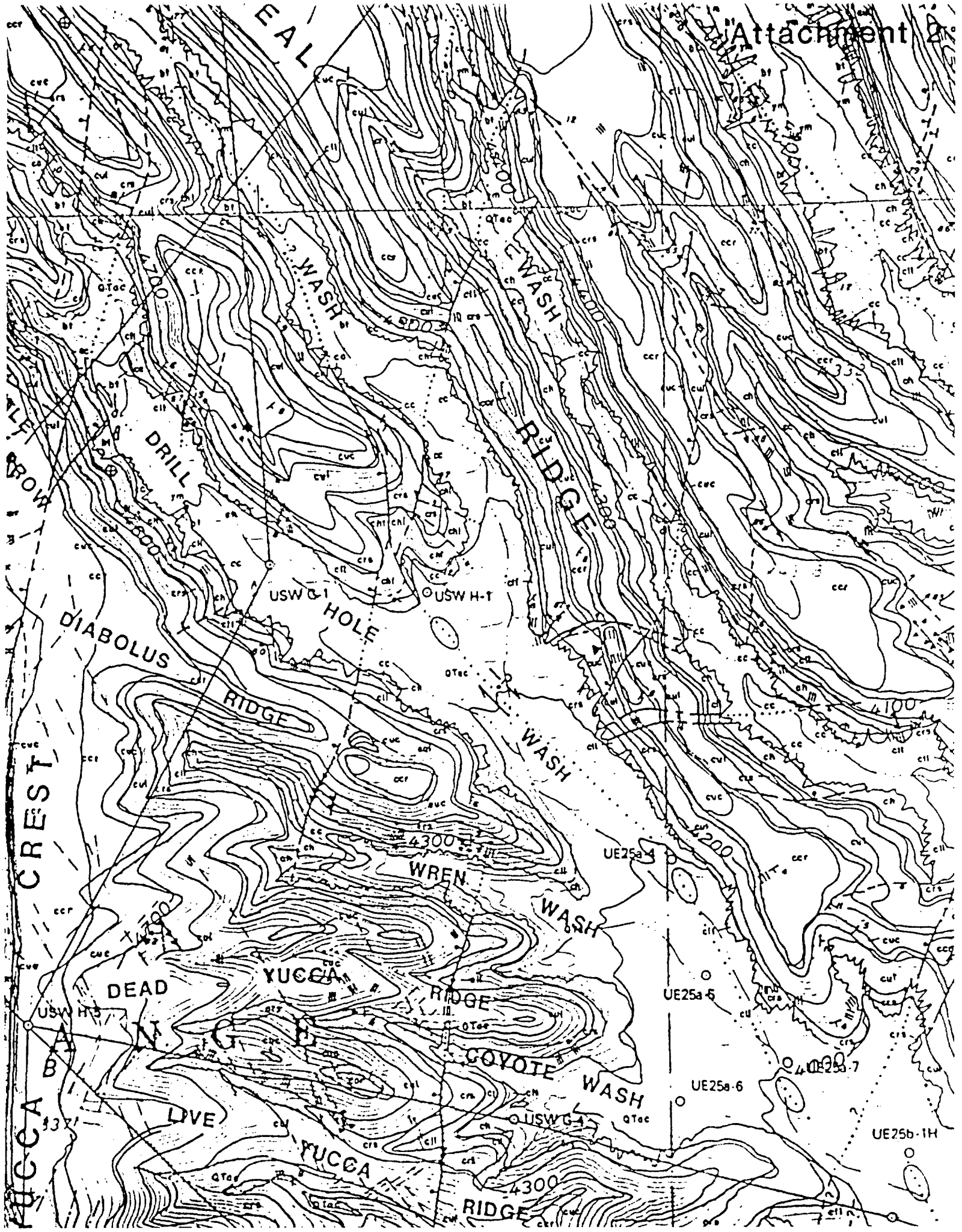
While visiting the site the group met two representatives of REECO who had the task of checking locations, cataloging, and placing locks on all wells at the site. Due to the establishment of the new Bullfrog County, the Nye County sheriff no longer will patrol the wells or site facilities and these duties may be taken over by the DOE.

ORIGINAL SIGNED BY

Charlotte Abrams
Geology/Geophysics Section
Technical Review Branch
Division of High-Level Waste Management, NMSS

Attachment 1

Mapped by the Army Map Service
Published for civil use by the Geological Survey
Control by USC&GS and USCE
Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1952 Field check 1952


EAL
WASH
4200
4300
RIDGE
DRILL
ALE
ROW
CREST
DIABOLUS
RIDGE
USW G-1
HOLE
USW H-1
WASH
4300
WREN
WASH
UE25a-4
200
100
YUCCA
DEAD
RIDGE
USW H-5
UE25a-5
COYOTE
WASH
UE25a-7
UE25a-6
USW G-1
UE25b-1H
LIVE
YUCCA
4300
RIDGE