



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

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TO: John J. Linehan, Director, HLPD  
Division of High-Level Waste Management, M/S 4-H-3

FROM: Paul T. Prestholt, Sr. On-Site Licensing Representative

DATE: August 15, 1989

SUBJECT: WEEKLY ACTIVITY REPORT PROTOTYPE TESTING

Please find enclosed the above-referenced information for the week ending June 25, July 2, and July 9, 1989.

PTP:nan

cc: Carl Johnson  
Agency for Nuclear Projects  
Nuclear Waste Project Office  
Capitol Complex  
Carson City, Nevada 89710

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WEEKLY ACTIVITY REPORT  
PROTOTYPE TESTING  
Week Ending - July 9, 1989

LLNL

**Engineered Barrier:**

LLNL personnel are monitoring the cool down measurements. Overcoring of the instrumentation package is scheduled to begin on August 1, 1989.

USGS

**Cross Hole:**

There has not been any NTS activity during this reporting period. USGS personnel are modifying packers and instrumentation that are to be used for this test. Tentatively, field work for this test should begin at G-Tunnel on October 2, 1989.

**Wet and Dry Drilling:**

Data collection is continuing on the test holes located in the U12g12 drift. No further field work is anticipated for this test.

**Drill Hole Instrumentation:**

Data collection is continuing on the two test holes located near the end of the U12g12 drift. No further field work for this test is anticipated.

**Blast Effects:**

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to begin on August 21, 1989.

**Excavation Effects:**

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to begin on September 14, 1989.

**Perched Water:**

The PI for this test continued to run TV logs for this test. Start of PW #4 is scheduled for July 11, 1989.

**Controlled Blasting:**

There has not been any NTS activity during this reporting period. The Controlled Blasting Test is tentatively scheduled to begin on August 14, 1989.

**In-Situ Stress:**

The In-Situ Stress hole U12G-IS #3, which is located in the left arch of the Demonstration Drift, was drilled to a depth of 37 feet using an EX bit. The EX hole will be drilled to a total depth of approximately 50 feet. A borehole camera TV log used to determine potential fracture and rubble zones. A 6 inch rock bit will be utilized to drill through these zones, and a 6 inch overcore will be used to retrieve core samples. In-Situ Stress hole U12G-IS #4, located in the left rib of the Laser drift, was advanced to a depth of 28.8 feet using a 6 inch overcore bit. A weekly overcore total of 2.5 feet was recovered. The ground is badly fractured, and the longest piece of core recovered is .3 feet. The tricone rock bit was used to drill 9.2 feet. Total hole depth is 38.0 feet. Drilling of holes U12G-IS #3 and U12G-IS #4 will continue next week.

**Intact Fracture:**

There has not been any NTS activity during this reporting period. Phase II field work for this test is scheduled to begin on July 17, 1989.

**Fran Ridge Mapping:**

There has not been any NTS activity during this reporting period. The mapping at Fran Ridge cannot begin until the proper permits are obtained from the state.

LANL

**Diffusion Test:**

Data collection is continuing for DH #2 in the Experiment Drift, and DH #3 in the CFE 3 and 4 drift. Phase II (instrumentation overcoring) cannot proceed until the CMM-2 drill is procured and delivered to G-Tunnel.

SNL

**Thermal Stress:**

There was no NTS activity during this reporting period. Field work for this test is tentatively scheduled to start on October 2, 1989.

**PROBLEMS AND ISSUES:**

None

EXPENDITURES

	Work Days Remain		Expended	
.Prototype Testing:	59		76 %	
.REECO: Current Week-Prototype Testing	\$ 8,789	Year to Date	\$379,198	
Current Week-G-Tunnel Operation	\$ 8,482	Year to Date	\$777,351	
.H&N: Current Week-Prototype Testing	\$ 5,277	Year to Date	\$217,122	
.F&S: Current Week-Prototype Testing	\$ *	Year to Date	\$ *	

\*Information not available at the time of this report.

WEEKLY ACTIVITY REPORT  
PROTOTYPE TESTING  
Week Ending - July 2, 1989

LLNL

**Engineered Barrier:**

LLNL personnel are monitoring the cool down measurements. Overcoring of the instrumentation package is scheduled to begin on August 1, 1989.

USGS

**Cross Hole:**

There has not been any NTS activity during this reporting period. USGS personnel are modifying packers and instrumentation that are to be used for this test. Tentatively, field work for this test should begin at G-Tunnel on October 2, 1989.

**Wet and Dry Drilling:**

Data collection is continuing on the test holes located in the U12g12 drift. No further field work is anticipated for this test.

**Drill Hole Instrumentation:**

Data collection is continuing on the two test holes located near the end of the U12g12 drift. No further field work for this test is anticipated.

**Blast Effects:**

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to begin on August 21, 1989.

**Excavation Effects:**

There has not been any NTS activity during this reporting period. Field work for this test is tentatively scheduled to begin on September 14, 1989.

**Perched Water:**

The PI for this test ran TV logs of the two perched water holes cored in the Laser Drift. Phase III of the Perched Water Tests is scheduled to begin on the week of July 10, 1989.

**Controlled Blasting:**

There has not been any NTS activity during this reporting period. The Controlled Blasting Test is tentatively scheduled to begin on August 14, 1989.

**In-Situ Stress:**

The In-Situ Stress hole U12G-IS #2 was completed at 40.6 feet. G-Tunnel personnel set up the drill rig to begin drilling hole U12G-IS #3, located in the left arch in the back in the Demonstration Drift. The hole will be drilled at an angle of 60 degrees. In-Situ Stress hole U12G-IS #4 was begun in the left rib of the Laser Drift. This hole will be drilled at an angle of + 5 degrees. An EX hole was drilled to a total depth of 50 feet. The PI then ran a TV log to determine fractures and potential rubble zones. A 6 inch rock bit drilled 7.5 feet of hole; overcore 1.5 feet; 6 inch rock bit 16.7 feet. Core recovery was 100%, while the largest piece of core was 2 feet. Drilling of the holes U12G-IS #3 and U12G-IS #4 will continue next week.

**Intact Fracture:**

There has not been any NTS activity during this reporting period. Phase II field work for this test is scheduled to begin on July 17, 1989.

**Fran Ridge Mapping:**

There has not been any NTS activity during this reporting period. The mapping at Fran Ridge cannot begin until the proper permits are obtained from the state.

LANL

**Diffusion Test:**

Data collection is continuing for DH #2 in the Experiment Drift, and DH #3 in the CFE 3 and 4 drift. Phase II (instrumentation overcoring) cannot proceed until the CMM-2 drill is procured and delivered to G-Tunnel.

SNL

**Thermal Stress:**

There was no NTS activity during this reporting period. Field work for this test is tentatively scheduled to start on October 2, 1989.

**PROBLEMS AND ISSUES:**

None

EXPENDITURES

.Prototype Testing:	Work Days Remain	<u>63</u>	Expended	<u>75</u> %
.REECO: Current Week-Prototype Testing	\$	16,589	Year to Date	\$370,333
Current Week-G-Tunnel Operation	\$	17,517	Year to Date	\$768,869
.H&N: Current Week-Prototype Testing	\$	7,333	Year to Date	\$217,122
.F&S: Current Week-Prototype Testing	\$	*	Year to Date	\$ *

\*Information not available at the time of this report.

WEEKLY ACTIVITY REPORT  
PROTOTYPE TESTING  
Week Ending - June 25, 1989

ACCOMPLISHMENTS

- LLNL - Engineered Barrier: LLNL personnel are continuing to monitor the cool-down measurements.
- USGS - Cross Hole: Modification to the packers and instrumentation is continuing at USGS, Denver. There is no NTS activity at this time.
- Wet and Dry Drilling: Data collection is continuing on the four test holes located in the U12g12 drift.
  - Drill Hole Instrumentation: Data collection is continuing on the two test holes located near the end of the U12g12 drift.
  - Blast effects: There was not NTS activity during this report period.
  - Excavation Effects: There was not NTS activity during this report period.
  - Perched Water: Total depth of perched water hole #3 is 103.4 feet. The PI used a borehole TV camera to determine fracture patterns in the hole.
  - Controlled Blasting: There was not NTS activity during this report period.
  - In-Situ Stress: The In-Situ Stress hole U12G-IS #2 located in the Demonstration Drift was overcored to a total depth of 49.35 feet. Core recovery was 100%, but the core was broken up very badly, and the largest piece recovered was .3 feet. The In-Situ Stress PI is continuing use of the borehole TV camera in the EX pilot hole to determine the most suitable place for overcoring. The total depth for the EX pilot hole is 52.4 feet.
  - Intact Fracture: There was not NTS activity during this report period.
- LANL - Diffusion Test: Test monitoring continues in DH #2 in the CFE 3 and 4 drift, and DH #3 in the experiment drift. A barrier was installed around the instrumentation at DH #2 to protect it from the drilling activities for the Intact Fracture test.
- SNL - Thermal Stress: There was no NTS activity during this reporting period.

PLANNED WORK:

- LLNL - Engineered Barrier: LLNL personnel will continue to monitor cool down measurements. Coring of the instrument package holes is tentatively scheduled to begin on August 14, 1989.
- USGS - Mapping: Fran Ridge mapping will commence as soon as Yucca Mountain Project authorization is obtained.
- Cross Hole: Preparation for G-Tunnel work is in progress, and tentatively is scheduled to begin on October 2, 1989.
  - Intact Fracture: Preparation to begin field work is underway. Phase II work is scheduled to begin on July 10, 1989.
  - Drill Hole Instrumentation: No work other than data collection is scheduled.

- Wet and Dry Drilling: No work other than data collection is scheduled.
- In-Situ Stress: Continue prototype overcore work on hole U12GIS #2 in the Demonstration Drift. Begin overcoring hole U12GIS #4 in the Laser drift.
- Controlled Blasting: Preparation to begin field work is underway. The Controlled Blasting Investigations Prototype Test is scheduled to begin on August 14, 1989.
- Blast effects: The Blast Effects Prototype Test is scheduled to begin on August 21, 1989.
- Excavation Effects: Testing is scheduled to begin on September 14, 1989.
- Perched Water: Continue running TV logs of perched water holes.

LANL - Diffusion: Continue monitoring DH #2, and DH #3. Develop a draft test installation coring procedure.

SNL - Thermal Stress: Preparation is beginning to start the field work for this test.

#### PROBLEMS AND ISSUES:

USGS - In-Situ Stress: Bad drilling conditions (fractures, rubble zones, etc.) continue to be a problem.

- Fran Ridge Mapping: Acquiring the proper permits continues to be a problem.

LANL - Intact Fracture: The overcoring for DH #2 and #3 cannot take place until the CMM-2 arrives on-site.

#### EXPENDITURES

.Prototype Testing:	Work Days Remain	<u>68</u>	Expended	<u>73</u> %
.REECO: Current Week-Prototype Testing	\$	16,414	Year to Date	\$353,822
Current Week-G-Tunnel Operation	\$	14,066	Year to Date	\$751,352
.H&N: Current Week-Prototype Testing	\$	5,141	Year to Date	\$209,789
.F&S: Current Week-Prototype Testing	\$	*	Year to Date	\$ *

\*Information not available at the time of this report.