

WA



# Reynolds Electrical & Engineering Co., Inc.

Post Office Box 98521 • Las Vegas, NV 89193-8521

IN REPLY REFER TO:

580-01-491

WBS 1.2.9.1

QA: N/A

MAY 18 1994

Robert M. Nelson, Jr.  
Acting Project Manager  
Yucca Mountain Site Characterization  
Office  
U.S. Department of Energy  
Post Office Box 98608  
Las Vegas, NV 89193-8608

YUCCA MOUNTAIN SITE CHARACTERIZATION VARIANCE ANALYSIS REPORT (SCP: N/A)

Enclosed are the subject reports for the month of April 1994.

If you have any questions, please contact Dean L. Knight at 794-7400.

Daniel L. Koss, Manager  
Yucca Mountain Project Division  
YMP Technical Project Officer

DLK:DK:L94156:mff

Enclosure  
Variance Analysis Reports (30 pages)

cy: See page 2

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**Yucca Mountain Site Characterization Project  
Variance Analysis Report  
Status Thru: 30 APR 94**

**PARTICIPANT:** REECO                      PEM: Brodsky                      WBS: 1.2.6.1.1  
**WBS TITLE:** Management Planning and Technical Assessment  
**P&S ACCOUNT:** OR611

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
568	568	324	0	0.0	100.0	244	43.0	175.3	2378	694	1684	70.8	1357	489.2

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

Late ramp up and vacancies due to turnover for the Construction Department management is causing a cost underrun which will be reallocated within WBS 1.2.6 to support construction activities.

**Cumulative Schedule Variance:**

**Variance At Complete:**

A cost underrun of \$1,684K at completion is projected for this account. An underrun of \$286K is projected due to vacancies caused by turnover in staffing for Construction Department Management, Planning, and Technical Assessment. Funding of \$1,398K budgeted at risk for poorly defined activities to support TBM operation will be reallocated to support revised planning activities. The activities canceled or deferred are:

Yucca Mountain Site Characterization Project  
Variance Analysis Report  
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PARTICIPANT: REECO                      PEM:                      WBS: 1.2.6.1.1  
WBS TITLE:                      Management Planning and Technical Assessment  
P&S ACCOUNT:                      02511

Variance At Complete: (continued)

the ESF Subsurface Grounding Grid, Temporary Muck Haulage/Truck support of TBM operation, Temporary Diesel Generated Power, Off-Pad Power Transmission (69kv & 138kv) equipment, Test Alcove #1 Ground Support (steel sets), Temporary Portal Control/Change House Facility on pad, and Starter Tunnel Maintenance support with Mine Rescue capability.

*M. Leonard*  
P&S ACCOUNT MANAGER

*5/18/94*  
DATE

*Harriet Kline* *5/18/94*  
TPO                      DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO                      PEM: Brodsky                      WBS: 1.2.6.1.3  
**WBS TITLE:**                      Safety Analysis  
**P&S ACCOUNT:**                      OR613

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCRS	BCRP	ACRP	SV	SVX	SPI	CV	CVX	CPI	BAC	EAC	VAC	VACX	LEAC	TCPI
143	143	62	0	0.0	100.0	81	66.6	230.6	330	235	95	28.8	98	102.5

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

**Cumulative Schedule Variance:**

**Variance At Complete:**

The cost to procure mine rescue equipment has been offset \$95K by obtaining and refurbishing existing Government-Owned equipment. The \$95K funding underrun will be reallocated to support revised planning activities.

Tom Howard                      5/18/94  
P&S ACCOUNT MANAGER                      DATE

Robert K. Brown                      5/18/94  
TPO                      DATE

**Yucca Mountain Site Characterization Project  
Variance Analysis Report  
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**PARTICIPANT:** REECo                      **PEM:** Gardiner                      **WBS:** 1.2.6.2.2.1  
**WBS TITLE:**                      **Surface Util/Communications - First Access Area**  
**P&S ACCOUNT:**                      **OR6221**

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
2688	1815	2164	-873	-32.5	67.5	-349	-19.2	83.9	3288	5108	-1820	-55.4	3919	50.0

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECo April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECo.

**Cumulative Cost Variance:**

Modifications have been made to the scope of work for the Sanitary Sewer based on Design Package 1B which have increased the costs. Cost to construct ductbanks are higher than budgeted. Costs are projected to increase due to increased material cost and batched concrete obtained from Area 1 instead of Area 25 batch plant.

**Cumulative Schedule Variance:**

Capital equipment planned to cost in November and February did not occur. This equipment is expected to cost beginning in May and is distributed through September 1994.

Construction of the ductbanks are behind schedule due to incomplete design releases and modifications to buried utility design. Delays to the start of buried utility construction coupled with design changes have led to replanning to recover the schedule.

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**PARTICIPANT:** REECO                      **PEM:** Gardiner                      **WBS:** 1.2.6.2.1.1  
**WBS TITLE:**                      **First Access Area**  
**P&S ACCOUNT:**                      **OR6211**

FY 1994 Cumulative to Date										FY 1994 at Completion					
BCRS	BCRP	ACRF	SV	SVE	SPI	LV	CVI	CPI		EAC	EAC	VAC	VACK	TEAC	TCPI
133	133	67	0	0.0	100.0	66	49.6	198.6		143	621	-478	-333.3	72	1.8

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

Cumulative Cost Variance:

Cumulative Schedule Variance:

Variance At Complete:

The projected overrun of \$478K at completion is due to revised planning increasing the scope of work under this account. Additional activities are placing compacted fill to grade on the ESF pad, preparation of the Pad Extension for the Temporary Muck Storage Area, and procurement of the Storm Drainage System.

*m. Leonard*                      5/18/94  
P&S ACCOUNT MANAGER                      DATE

*Albritton*                      5/18/94  
TPO                      DATE



**Yucca Mountain Site Characterization Project  
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Status Thru: 30 APR 94**

**PARTICIPANT:** REFCo                      **PEM:** Gardiner                      **WBS:** 1.2.6.2.2.1  
**WBS TITLE:**                      **Surface Util/Communications - First Access Area**  
**P&S ACCOUNT:**                      **0R6221**

**Variance At Completion:**

A cost overrun of \$1,820K is projected at completion due to replanning the scope of work reported in the Estimate at Completion. A cost growth of \$338K is projected to secure capital equipment.

The construction activities included in the revised planning are as follows:

- Firewater and Potable Water System installed on the ESF pad including concrete encasement under the railroad bed. Tie-in to the Traced Water System.
- Temporary Electrical Power Distribution on the pad including installation of the Subsurface Electrical Grounding Grid.
- Partial installation of the Ductbanks including the cable runs to power the Subsurface Electrical Power enclosure for TBM operation.

Baselined activities that will not be included in the revised scope of work are temporary communication and control cables and the Switchgear Building Electrical Transformer/Switchgear tie-in.

M. Howard                      5/18/94  
**P&S ACCOUNT MANAGER**                      **DATE**

Barrett Kellum                      5/18/94  
**TPO**                      **DATE**



**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECo                      **PEM:**                      **WBS: 1.2.6.2.2.4**  
**WBS TITLE:**                      **Other Locations - Surface Util/Communications**  
**P&S ACCOUNT:**                      **OR6224**

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
1131	893	1778	-238	-21.0	79.0	-885	-99.1	50.2	1712	2555	-843	-49.2	3410	105.4

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECo April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECo.

**Cumulative Cost Variance:**

Costs for excavation and installation of the waterline are higher than projected. The scope of work has increased costs for handling and stockpiling topsoil and subsoil, a larger trench width, and additional bedding sand quantities. The standup characteristics of the open trench are requiring additional effort to maintain than initially estimated.

**Cumulative Schedule Variance:**

Installation of the Booster Pump and Booster Pump Building has been deferred to FY95.

**Variance At Complete:**

A cost overrun of \$843K is projected at completion due to cost growth to install the waterline from J-13 Well to the Booster Pump Station and replanning the scope of work included under this P&S account.

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**PARTICIPANT:** REECO                      **PEN:**                      **WBS: 1.2.6.2.2.4**  
**WBS TITLE:**      Other Locations - Surface Util/Communications  
**P&S ACCOUNT:**    OR6224

**Variance at Completion:** (continued)

Cost growth for the waterline is due to design changes and field conditions encountered during construction as stated in the Cumulative Cost Variance. The cost estimate is revised increasing the projected cost at completion by \$1020K.

Additionally, the revised scope of work contributing to the Variance at Completion is limited to the following activities:

The Water Storage Tanks/Chlorine System is expected to overrun by \$259K due to modification to the design to accommodate an archeological site and fencing near the water storage area.

The Booster Pump is expected to underrun by \$443K due to deferment of installation of the Building and Station until FY95.

                                      5/18/94  
P&S ACCOUNT MANAGER          DATE

                                      5/19/94  
TPO    DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO                      **PEM:** Gardiner                      **WBS:** 1.2.6.2.2.5.1  
**WBS TITLE:** Temporary Power Supply - 69KV Transmission Line  
**P&S ACCOUNT:** 0R62251

FY 1994 Cumulative to Date										FY 1994 at Completion					
BORS	BCRP	ACRP	SV	SV%	SPI	CV	CV%	LPI		BAC	EAC	VAC	VAC%	FEAC	TLPI
882	612	856	-270	-30.6	69.4	-244	-39.9	71.5		882	936	-54	-6.1	1234	337.5

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TEM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/EMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

Cost growth to construct the 69Kv Transmission Line is currently estimated to increase \$324K. The cost overrun is due to increased scope of work resulting from actual field conditions requiring additional modifications to bring the Switchgear/Substation into compliance with environmental, seismic, safety codes, and DOE requirements.

**Cumulative Schedule Variance:**

Schedule variance is caused by deferment of capital equipment procurement to FY95.

**Variance at Completion:**

*W. Howard*                      5/18/94  
\_\_\_\_\_  
P&S ACCOUNT MANAGER                      DATE

*Daniel Kellum*                      5/18/94  
\_\_\_\_\_  
TPO                      DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO      **PEM:** Gardiner      **WBS:** 1.2.6.2.2.5.2  
**WBS TITLE:**      **Permanent Power Supply - 138KV Transmission Line**  
**P&S ACCOUNT:**      **OR62252**

<u>FY 1994 Cumulative to Date</u>									<u>FY 1994 at Completion</u>					
<u>BCWS</u>	<u>BCWP</u>	<u>ACWP</u>	<u>SV</u>	<u>SV%</u>	<u>SPI</u>	<u>CV</u>	<u>CV%</u>	<u>CPI</u>	<u>BAC</u>	<u>EAC</u>	<u>VAC</u>	<u>VACE</u>	<u>IEAC</u>	<u>TCPI</u>
385	0	0	-385	-100.0	0.0	0	0.0	0.0	411	0	411	100.0	0	0.0

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 P&S upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

**Cumulative Schedule Variance:**

Capital Equipment summary account expected costs in December did not occur. Capital requirements supporting the 138KV Transmission Line are under M&O review and have been deferred from FY94.

**Variance At Complete:**

The projected underrun of \$411K at completion will be allocated to fund revised planning activities.

*M. Howard*      5/18/94      *Robert Allen*      5/18/94  
P&S ACCOUNT MANAGER      DATE      TPO      DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO                      PEM: Gardiner                      WBS: 1.2.6.3.1.1  
**WBS TITLE:**                      Bldgs/Surface Facilities - First Access Area  
**P&S ACCOUNT:**                      OR6311

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
2443	194	135	-2249	-92.1	7.9	59	30.4	143.7	2842	978	1864	65.6	1978	314.1

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

**Cumulative Schedule Variance:**

Procurement of capital equipment (surface conveyor) planned to cost in February 1994 did not occur. Current planning will defer the procurement into FY95.

Design for Switchgear Building foundation was released for construction on December 14, 1993 permitting the excavation activity (baselined in October 1993) to commence in January, 1994. Also, the ESF Pad layout is being modified for muck handling and enlargement which impacts placing a temporary Portal Control Fence. Erection of the Switchgear Building and Portal Control fencing are replanned and construction will begin later than baselined.

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PARTICIPANT: REECO                      PEM: Gardiner      WBS: 1.2.6.3.1.1  
WBS TITLE:      Bldgs/Surface Facilities - First Access Area  
P&S ACCOUNT:      0R6311

Variance At Complete:

A cost underrun of \$1,864K is projected at completion due to replanning which reduces the scope of work originally planned. The reduction in work planned is procurement of capital equipment (surface conveyor) which is deferred to FY95. Budget underrun will be allocated to meet replanning budget requirements.

*W. M. Howard*      5/18/94      *Robert Nelson*      5/18/94  
P&S ACCOUNT MANAGER      DATE      TPO      DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO                      PEM: Gonzalez                      WBS: 1.2.6.4.1  
**WBS TITLE:**                      First Access Portal/Collar and Plant Setup  
**P&S ACCOUNT:**                      OR641

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
1736	1131	804	-605	-34.9	65.1	327	28.9	140.7	1999	1790	209	10.5	1421	88.0

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

Cost underrun is due to completing excavation of the test alcove #1 below funding baselined; and, a reduction in time required to maintain the Starter Tunnel between underground operations.

**Cumulative Schedule Variance:**

Starter Tunnel cleanup at Area 25 did not begin until the end of April 1994 pending release of final drawings. Hence no costs were reported.

Installation of the Compressed Air System has been delayed pending design issuance. Current planning identifies a temporary compressed airline powered by refurbished Government-owned air compressors will be installed to support TBM operation.

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**PARTICIPANT: REECO                      PEM: Gonzalez                      WBS: 1.2.6.4.1**  
**WBS TITLE:                      First Access Portal/Collar and Plant Setup**  
**P&S ACCOUNT:                      OR641**

**Variance At Completion**

The underrun of \$209K projected at completion is due to replanning and reducing the scope of work originally planned. Activities not included in the revised plan are deferring procurement of Transfer Tower and associated equipment and deferring installation of the final Compressed Air Plant and Pipeline. Additional work included in the Estimate at Completion that were not in the baseline are support of the Rockbolt Testing program per FCR 94-087 and providing a temporary compressed air system. Also, additional cost for work in the Starter Tunnel is mainly due to additions and modifications to the originally conceived scheme of construction including changes to the TBM transport channel rail. Funding underrun will be allocated to support replanning.

*M. Howard*                      5/18/94  
P&S ACCOUNT MANAGER                      DATE

*David M. ...*                      5/18/94  
TPO                      DATE



**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECo                      **PEM:** Gonzalez            **WBS:** 1.2.6.4.2  
**WBS TITLE:**        **First Access Topopah Springs Exc/Util/Equip**  
**P&S ACCOUNT:**    **OR642**

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
22605	11593	9684	-11009	-48.7	51.3	1912	16.5	119.7	31555	33084	-1529	-4.8	26362	85.3

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECo April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECo.

**Cumulative Cost Variance:**

The mobilization of some of the personnel originally anticipated as being required for Stage 1 was postponed pending a reassessment of the personnel requirements.

Actual mobilization of personnel at Area 25 began in March 1994. The full mobilization of supervisory personnel has been delayed until the startup of 3 shift operation.

Actual mobilization of personnel at the Area 25 site did begin in March 94 and continued through April 94. Training of field personnel also continued through April 94. However, a substantial part of the training is expected to occur in May 94 when second shift operations are scheduled to begin and continue through the remainder of the fiscal year.

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PARTICIPANT: REECO                      PEM: Gonzalez                      WBS: 1.2.6.4.2  
WBS TITLE:                      First Access Topopah Springs Exc/Util/Equip  
P&S ACCOUNT:                      OR642

Cumulative Schedule Variance:

The TBM manufacturer has not submitted billing in accordance with his progress payment schedule causing a schedule variance.

Approval of procurement of Capital Equipment was delayed due to changes in the scope of work and changes in the design requirements of the ESF. Early procurement releases were received and procurement process started for most of the capital equipment. However, no commitments had been made for Capital Equipment within the cutoff dates for this reporting period. Most of the commitments to vendors for Capital Equipment will be made in May & June 1994.

Procurement of Non-Capital equipment and materials required for TBM assembly was delayed pending an approved Stage 2 budget. Procurement activities did occur in March and early April 94, but no commitments were made to vendors and no actual monies expended within the cutoff date for this reporting period.

Yard layout and approval process began in March 94. However, there were no actual costs associated with this activity. Procurement activities also continued in early April 1994; however, no commitments to vendors were made during this period.

Variance At Complete:

M. Brown                      5/18/94                      R. Smith                      5/18/94  
P&S ACCOUNT MANAGER                      DATE                      TPO                      DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO                      **PEM:** Gonzalez              **WBS:** 1.2.6.4.4  
**WBS TITLE:**      **First Access Construction Test Support**  
**P&S ACCOUNT:**      **OR644**

<u>FY 1994 Cumulative to Date</u>									<u>FY 1994 at Completion</u>					
<u>BQWS</u>	<u>BCHP</u>	<u>ADP</u>	<u>SV</u>	<u>SV%</u>	<u>SPI</u>	<u>CV</u>	<u>CV%</u>	<u>CPI</u>	<u>BAC</u>	<u>EAC</u>	<u>VAC</u>	<u>VAC%</u>	<u>IEAC</u>	<u>TCPI</u>
330	330	201	0	0.0	100.0	129	29.1	154.2	650	650	0	0.0	396	71.3

**Analysis**

**Cumulative Cost Variance:**

Cost due to test interference have not occurred as planned due to reduced activity in the Starter Tunnel and Alcove. No project milestones were impacted, and no other participants were significantly affected. Expect no impact to project. No corrective action required.

**Cumulative Schedule Variance:**

**Variance At Complete:**

M. Howard                      5/18/94                      Robert H. Brown                      5/19/94  
 P&S ACCOUNT MANAGER                      DATE                      TPO                      DATE

**Yucca Mountain Site Characterization Project  
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**PARTICIPANT:** REECO                      PEM: Fortner                      WBS: 1.2.6.8.1  
**WBS TITLE:**                      Surface, Site, and Equipment Maintenance  
**P&S ACCOUNT:**                      0R681

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SVE	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	TEAC	TCPI
96	95	217	0	0.0	100.0	-121	-126.0	44.2	170	278	-108	-63.5	385	121.3

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

Same as Variance at Completion.

**Cumulative Schedule Variance:**

**Variance At Completion:**

An overrun of \$108K projected at completion is due to increased scope of work providing maintenance to office trailers on the pad. Dust control requirements for ESF Pad and Access Roads are much greater than the baseline estimate. The mileage and requirements are greater.

McKorand                      5/18/94  
P&S ACCOUNT MANAGER                      DATE

Barrett Moore                      5/19/94  
TPO                      DATE

**Yucca Mountain Site Characterization Project  
Variance Analysis Report  
Status Thru: 30 APR 94**

**ARTICIPANT:** REECO                      **PEM:** Fortner                      **WBS:** 1.2.6.8.2  
**WBS TITLE:**                      **ESF Operations**  
**P&S ACCOUNT:**                      **0R682**

FY 1994 Cumulative to Date									FY 1994 At Completion					
BGWS	BONP	ADWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	FEAC	TCPI
2551	2396	3307	-165	-6.4	93.6	-911	-38.0	72.5	4097	5946	-1849	-45.1	6651	64.5

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

**Cumulative Cost Variance:**

Batch plant certification has increased in cost. The 69KV Power line has not been completed; therefore, generator power has been required longer than anticipated. Additional communication requirements have occurred for M&O trailers on the pad. Vehicle usage, bottled water, ice and ESF sanitation have increased in cost. Environmental requirements are greater than expected. There is also an increase in site access control and tour support.

**Cumulative Schedule Variance:**

**Variance At Complete:**

The overrun of \$1,849K projected at completion is due to increased scope of work for the batch plant; and, replanning ESF operations support and services necessary for ESF construction and tunnel operations. The screen plant setup and operation was not in the baseline.

M. Howard                      5/18/94                      Kevin Helton                      5/19/94  
P&S ACCOUNT MANAGER                      DATE                      TPO                      DATE

**Yucca Mountain Site Characterization Project  
Variance Analysis Report  
Status Thru: 30 APR 94**

**PARTICIPANT:** REECO                      **PEM:** Fortner                      **WBS:** 1.2.6.8.3  
**WBS TITLE:** Oper/Env/Health & Safety Training  
**P&S ACCOUNT:** 0R683

FY 1994 Cumulative to Date										FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SVI	SPI	CV	CVI	CPI		EAC	EAC	VAC	VACV	TEAC	TCPI
94	94	29	0	0.0	100.0	65	69.1	324.1		162	110	52	32.1	50	64.0

**Analysis**

The Fiscal Year (FY) 1994 baselined schedule and budget for WBS 1.2.6 has been evaluated with regard to current construction progress, status of approved design and advanced procurement activities, and current planning decisions. In order to meet the FY 1994 requirement to begin TBM operation, a revised schedule and budget distribution has been developed based on a scope of work other than originally established. The REECO April 1994 PACS upload reflects the revised plan and is reported by the Estimate At Completion (EAC). A mutual decision to report the revised plan was made between DOE/YMPO, M&O PE, and REECO.

Cumulative Cost Variance:

Cumulative Schedule Variance:

Variance At Complete:

Personnel training for Tunnel rescue is less than planned and is projected to underrun \$52K at completion. The \$52K funding underrun will be reallocated to support revised planning activities.

M Howard                      5/18/94  
P&S ACCOUNT MANAGER                      DATE

Barrett                      5/19/94  
TPO                      DATE

**Yucca Mountain Site Characterization Project  
 Variance Analysis Report  
 Status Thru: 30 APR 94**

**PARTICIPANT:** REECO                      **PEM:** Waters                      **WBS:** 1.2.7.5.1  
**WBS TITLE:**                      **General Operations**  
**P&S ACCOUNT:**                      **OR751**

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
									785	985	-200	-25.5	984	79.6

**Analysis**

**Cumulative Cost Variance:**

The Cumulative Cost Variance is due to the cost of metered power being more than originally planned. Costs for power have increased from \$.07 kw-hr to \$.10 or \$.12 kw-hr.

**Cumulative Schedule Variance:**

**Variance At Complete:**

It is estimated that an additional \$200K will be required for metered power and sanitation. This is reflected in the Estimate At Completion. Additional funds are required to provide metered power through the end of the fiscal year.

*Robert M. ...* 5/19/84  
 \_\_\_\_\_  
 P&S ACCOUNT MANAGER                      DATE

*Robert M. ...* 5/19/84  
 \_\_\_\_\_  
 TPO                      DATE

**Yucca Mountain Site Characterization Project  
 Variance Analysis Report  
 Status Thru: 30 APR 94**

**PARTICIPANT:** REECO                      **PEM:** Valentine                      **WBS:** 1.2.7.7  
**WBS TITLE:**                      Common Equipment  
**P&S ACCOUNT:**                      0R77

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	TEAC	TCPI
0	0	0	0	0.0	0.0	0	0.0	0.0	326	251	75	23.0	188	105.0

**Analysis**

**Cumulative Cost Variance:**

**Cumulative Schedule Variance:**

**Variance At Complete:**

Due to usage of light duty vehicles being less than originally planned there will be a projected underrun of \$100K for the fiscal year. A C/SCR is in process to transfer this underrun to 1.2.7.5.2.

*Barbara Moore* 5/19/94  
 P&S ACCOUNT MANAGER                      DATE

*Barbara Moore* 5/19/94  
 TPO                      DATE



**Yucca Mountain Site Characterization Project  
Variance Analysis Report  
Status Thru: 30 APR 94**

**PARTICIPANT:** REECO                      **PEM:** Baumeister                      **WBS:** 1.2.13.2.2  
**WBS TITLE:** Environment, Safety & Health - Medical  
**P&S ACCOUNT:** ORD22

FY 1994 Cumulative to Date									FY 1994 at Completion					
BCWS	BCWP	ACWP	SV	SV%	SPI	CV	CV%	CPI	BAC	EAC	VAC	VAC%	IEAC	TCPI
0	0	0	0	0.0	0.0	0	0.0	0.0	290	550	-260	-89.7	559	53.0

**Analysis**

**Cumulative Cost Variance:**

**Cumulative Schedule Variance:**

**Variance At Complete:**

Initial planning between REECO and the DOE Division Director for this P&S account were not appropriately incorporated into the FY94 Baseline. A C/SCR to correct and rebaseline this P&S Account for an additional \$85K was processed, rejected, and resubmitted. An increase of \$175K is also required to provide medical coverage for back shift coverage to support assembly of the TBM and maintain the schedule for starting TBM operations this fiscal year.

<u>David Morse</u>	<u>5/19/94</u>	<u>David Morse</u>	<u>5/19/94</u>
P&S ACCOUNT MANAGER	DATE	TPO	DATE

