Office of Civilian Radioactive Waste Management

Quarterly Report on Program Cost and Schedule

First Quarter FY 1988

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MASTER

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PREFACE

This report is intended to provide a summary of the cost and schedule performance for the civilian radioactive waste management program. Performance data are presented for each of the major program elements. Also included in this report is the status of the Nuclear Waste Fund revenues and disbursements. This report includes performance data through December 1987.

In December 1987, Congress passed the Nuclear Waste Policy Amendments Act of 1987 which changed the near-term activities of the program. Specifically, this Act required that the tuff site in Nevada be characterized for the first repository and that site-specific activities at the other two first repository sites (the salt site in Texas and the basalt site in Washington) be terminated within 90 days of enactment. The Act also requires the phase-out of all second repository activities designed to evaluate the suitability of crystalline rock as a potential host rock for a repository. The new legislation impacts the contents of this report by focusing the first repository program on the activities of the tuff project and phasing-out the activities for the salt, basalt and second repository projects.

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HIGHLIGHTS

- Major accomplishments for the first repository tuff project (NNWSI) during the first quarter of FY88 were:
 - Revised draft of NNWSI Systems Engineering Management Plan completed and issued for review and approval.
 - Near-Surface Test Facility Waterline completely installed.
 - Revision 1 of the Environmental Monitoring and Mitigation Plan and the Comment Analysis Document for Yucca Mountain was finalized and submitted to DOE/HQ.
 - Field activities resumed at the Nevada Test Site following resolution of labor union disputes.
 - Completed final changes to the Site Characterization Plan Consultation Draft (SCP/CD).
 - The NNWSI Project Management Plan was submitted to DOE/HQ for concurrence.
- Actual costs through the first quarter of FY88 for the total first repository projects were \$66.3 million. The BWIP project accounted for 30 percent (or \$19.8 million) of the total; the NNWSI project accounted for 39 percent (or \$25.6 million) and the SRP project accounted for 31 percent (or \$20.8 million).
- The negative schedule variance (cumulative from October 1984) through the first quarter of FY88 for the first repository tuff project remained the same as last quarter at -4 percent (or -\$9.6 million). The cost variance through the first quarter of FY88 decreased on a percentage basis from 9 percent in the previous quarter to 8 percent, but remained constant on a dollar basis at \$20.4 million.
- Through the first quarter of FY88, actual costs for the second repository project were 1 percent (or \$0.5 million) more than planned costs.
- Since June 1986, the MRS project has been reporting based on the level-of-effort of work performed. Variance analysis reporting will be resumed for the MRS report when future project plans are established. Actual costs through the first quarter of FY88 were \$0.3 million.
- Through the first quarter of FY88, actual costs for the transportation program were 3 percent (or \$0.1 million) less than planned costs.
- Through the first quarter of FY88, the difference between planned and actual cost for systems integration activities was 3 percent (or less than \$0.1 million).

PROGRAM MILESTONE REVIEW

- The Program Milestone Review (PMR) is a monthly report which monitors the status of significant program milestones. Baseline, actual, and rescheduled dates are reported each month for selected activities. The PMR chart in this report reflects the rebaselining of major milestones which incorporate the impact of the new legislation. The PMR used for this report is the schedule as of February 1, 1988.

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BASELINE MILESTONE DATE
ACTUAL COMPLETION DATE
FORECAST MILESTONE DATE
 TBD TO BE DETERMINED

PROGRAM MILESTONE REVIEW

(AS OF 1 FEBRUARY 1988)

NUCLEAR WASTE FUND PROJECTIONS

- For FY83 through FY87, receipts were actual amounts collected from utilities while disbursements included both actual disbursements and interest paid on the appropriated debt.
- The current projection (February 1988) assumes the revenues from the 1 mill per kwh fee contained in the December 1987 EIA projection. Revenues from the one-time fee and earned interest are based on the FY 1989 budget submittal to Congress. FY88 disbursements are based on preliminary estimates of planned costs. Disbursements for FY 1989 and FY 1990 assume the budget authority estimates contained in the FY 1989 budget submittal.
- The November 1987 projection assumed the revenues from the 1 mill per kwh fee contained in the September 1987 EIA projections. Revenues from the one-time fee and earned interest were based on the program's estimates as of September 1987. Disbursements for FY88 through FY90 assumed the budget outlay estimates contained in the FY87 budget submittal.
- The February 1986 projection assumed the cost estimates, revenue (both from the 1 mill per kwh and the one-time fee), and earned interest contained in the FY87 budget submittal.
- Projection of net balance made in January 1985 was based on revenue and cost projections (escalated to current dollars by an average annual growth rate of 5 percent per year) in the FY86 budget submitted to Congress in January 1985. This projection assumed that \$770 million would be received in June 1985 for the one-time payment for fuel generated before 1983 (compared to the \$1.4 billion that was actually collected). The projection of net balance assumed that a positive yearly balance earns interest at a rate of 7 percent per year.

PROJECTED NUCLEAR WASTE FUND

PROJECTED NET BALANCE

PROJECTED VERSUS ACTUAL FUND REVENUES

- Actual revenues from the 1 mill/kwh fee for the first quarter of FY88 were \$123.3 million. These revenues were \$0.3 million (or less than 1 percent) more than the projection of revenues made for this quarter on December 10, 1987. The actual revenues were \$3.7 million (or 3 percent) higher than that projected in September 1987, and \$10.5 million (or 8 percent) lower than that projected in June 1984.
- Comparison of June 1984 projection of revenues from the 1 mill/kwh fee with actual collections on a quarterly basis indicates that the projections have fallen within -\$6 million to +\$45 million of actual amounts. The +\$45 million difference in the June 1984 projection versus the actual amount collected in the 4th quarter of FY86 was due to credits given to the utilities for previous overpayment as a result of the change in the fee basis from gross to net generation.

Waste fund revenues from 1 mill/kwh fee: actual vs. projected.

FINANCIAL PROFILE OF FIRST REPOSITORY PROJECTS

- FY88 cost plans for the first repository projects have not been finalized. Detailed planning is currently underway and the new cost plans will be reported when available.
- FY88 actual costs through the first quarter for the first repository projects were \$66.3 million. The distribution of the \$66.3 million by project was \$25.6 million for NNWSI, \$20.8 million for SRP, and \$19.9 million for BWIP.
- Through the first quarter of FY88, cumulative actual costs (from FY83) for the first repository projects totaled \$1293 million of which 36 percent (or \$470 million) was accounted for by SRP, 33 percent (or \$425 million) by BWIP, and 31 percent (or \$398 million) by NNWSI.

Financial Profile for all First Repository Projects

Financial Profile for BWIP

Financial Profile for NNWSI

Financial Profile for SRP

VARIANCE ANALYSIS ASSUMPTIONS

- There are three parameters which provide the basis for variance analysis of project performance, according to the Cost and Schedule Control Systems Criteria (CSCSC). These are:

- The budgeted cost for work scheduled (BCWS)
- The budgeted cost for work performed (BCWP)
- The actual cost of work performed (ACWP)

- The measures of cost and schedule variance presented in this report use these parameters as defined below:

$$\text{Schedule Variance (\%)} = \frac{\text{BCWP} - \text{BCWS}}{\text{BCWS}}$$

$$\text{Cost Variance (\%)} = \frac{\text{BCWP} - \text{ACWP}}{\text{BCWP}}$$

- A positive variance is a favorable indicator, while a negative variance is an unfavorable indicator.
- In response to the new legislation, the variance analysis data presented in this report for all program elements except the tuff repository project begin with FY 1988. Until the tuff project is rebaselined, the cumulative variance analysis from the beginning of FY 1986 will continue to be presented.

VARIANCE ANALYSIS FOR THE FIRST REPOSITORY PROJECT

- Due to the delay in obtaining firm guidance for fiscal year 1988 funding, no baseline has yet been established for the NNWSI project. For the first quarter, only actual costs (ACWP) were reported; thus BCWS and BCWP were assumed to equal ACWP.
- The negative schedule variance through the first quarter of FY88 for NNWSI remained the same as the previous quarter at -4 percent (or -\$9.6 million).
- The cost variance through the first quarter of FY88 decreased from 9 percent in the previous quarter to 8 percent but remained constant on a dollar basis at \$20.4 million.

TOTAL PROJECT: NNWSI

FINANCIAL PROFILE OF SECOND REPOSITORY PROJECT

- Actual costs through the first quarter of FY88 for the second repository project were less than 1 percent (or \$0.5 million) more than planned costs.

Financial Profile for Second Repository

FINANCIAL PROFILE OF MRS PROJECT

- The MRS project covers the work administered through the Richland and Oak Ridge field offices and the cost data are based on the MRS and CSFM Status Reports prepared monthly by the Richland office. Since work is being performed on a level-of-effort basis, no cost plan is yet available.
- FY88 actual costs for the MRS project through the first quarter of FY88 were \$0.3 million.

Financial Profile for MRS

VARIANCE ANALYSIS FOR MRS PROJECT

- Starting in June 1986, budgeted cost is assumed to equal actual cost due to the level-of-effort nature of the work currently being performed. Variance analysis reporting will be resumed when future project plans are established.

FINANCIAL PROFILE OF TRANSPORTATION PROJECT

- Detailed FY88 cost plans are not available for the activities of the three DOE field offices (Idaho, Chicago, and Oak Ridge) which comprise the transportation project. Based on preliminary estimates, the planned total cost for the project in FY88 is \$22.9 million. Sixty-eight percent (or \$15.4 million) of the total planned cost for transportation was accounted for by the Idaho field office. Chicago represents 23 percent of the total planned cost while Oak Ridge accounts for the remaining 9 percent.
- FY88 actual costs through the first quarter of FY88 were \$2.9 million.

Financial Profile for Transportation

VARIANCE ANALYSIS FOR TRANSPORTATION PROJECT

- Through the first quarter of FY88, the cost variance was zero and the schedule variance was -2 percent (or -\$0.1 million).

TOTAL PROJECT: TRANSPORTATION

CUMULATIVE PERFORMANCE

CUMULATIVE VARIANCE TRENDS

FINANCIAL PROFILE FOR SYSTEMS INTEGRATION

- Systems integration activities are composed of work performed by Pacific Northwest Laboratory (PNL) and Oak Ridge National Laboratory (ORNL). Based on FY88 cost plans, \$8.6 million is planned to be costed in FY88.
- FY88 actual costs for combined systems integration activities through the first quarter of FY88 were \$1.6 million, or \$0.1 million greater than the planned cost.

Financial Profile for Systems Integration

VARIANCE ANALYSIS FOR SYSTEMS INTEGRATION

- Projects do not yet use earned value system for reporting so that schedule variance was assumed to be zero and cost variance is the difference between budgeted and actual costs.
- Through the first quarter of FY88, the cost variance was 3 percent (or less than \$0.1 million).

TOTAL PROJECT: SYSTEMS INTEGRATION

GLOSSARY

ACWP - Actual Cost of Work Performed

The cost actually incurred in accomplishing the work performed (BCWP).

BCWP - Budgeted Cost of Work Performed

The earned value of work performed in terms of the original budget. It is a sum of the budgets for completed work packages and the completed portion of in-process work packages during a given period.

BCWS - Budget Cost of Work Scheduled

The sum of budgets for the work packages scheduled to have been accomplished during an incremental period of time or cumulative-to-date.

Cost Variance - (BCWP minus ACWP)

The cost variance indicates whether more or less money was spent for work performed than was planned for that amount of work.

Cost Variance (%) - (Cost Variance over BCWP)

The cost variance measured against the work performed.

Schedule Variance - (BCWP minus BCWS)

The schedule variance is a quantification of the schedule deviation in terms of dollars. A positive variance indicates an ahead-of-schedule condition.

Schedule Variance (%) - (Schedule Variance over BCWS)

The schedule variance measured against the work planned.

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