

Fissile Materials Disposition Program



Plutonium Immobilization Project Development and Testing Baseline and Progress Monthly Report December 2000

January 2001

Work performed by:

Lawrence Livermore National Laboratory

Westinghouse Savannah River Company

Argonne National Laboratory

Pacific Northwest National Laboratory

For the U.S. DOE MD Program

Plutonium Immobilization Project

Lawrence Livermore National Laboratory
Livermore, California 94550

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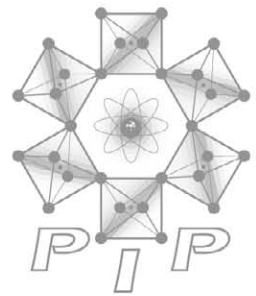
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Executive Summary

1 Pre-Design Phase Activities

1.2 DOCDR

Major Technical Accomplishments

Bechtel prepared final documentation for their files associated with the D&T program. The DOCDR, Rev. 3, is awaiting the final sign-off sheet from NN-62 prior to issuance.

2.1 Program Management

Major Technical Accomplishments

The TPO QA Office performed the first annual audit (PIP D&T TPO Audit 01-01) of the LLNL PIP QA Program.

Significant Issues and Risks

The budget reduction in FY01 will result in delay in the start of design and additional risk to the program.

2.2 D&T for Design

2.2.1 Technical Support and Integration

Major Technical Accomplishments

- 14 SDDs for the 13 MT case were reviewed, updated, and prepared for issue.
- Resolution of RFETS materials-acceptance issues is near completion. WSRC is awaiting transmittal of item-level characterization data from RFETS.

2.2.2 Immobilized Form Development

Major Technical Accomplishments

A draft of the Preliminary PCM is nearly complete. Experimental testing in the Form Development activity is complete.

2.2.3 Plutonium Conversion Process and Equipment Development

Major Technical Accomplishments

- Completed a Facility Engineering Design Review (FEDR) for installation of the dustless transfer system and RIAR washer within Room 1378.
- Revisions of draft SDDs for Metal Conversion and Impure Oxide Feed Preparation will be completed by WSRC.

2.2.4 First-Stage Immobilization Process and Equipment Development

Major Technical Accomplishments

- The installation of the PuCTF equipment in the Plutonium Facility has begun. The glovebox line in B-241 has been deactivated, and disassembly is well under way.
- A fully integrated furnace run using annular space cooling air, purge air, water cooling, and the exhaust gas system was performed at Clemson. A furnace cycle time of approximately 24 hours was observed which is consistent with the DOCDR assumptions.
- WSRC is in the process of contracting Cogema to perform blending studies with simulated PIP powders in an existing blender test bed.

Significant Issues and Risks

- The long cooling times observed from the earlier furnace testing at Clemson identified the sintering furnace as a potentially significant plant design issue. While recent results are encouraging, attention will continue to be focused on this issue.

2.2.5 Second-Stage Immobilization Process and Equipment Development

Major Technical Accomplishments

- The Phase 2 cold pour test report was issued.
- Revisions to the draft SDDs for the 13 MT throughput plant are underway.

2.3 D&T for Form Qualification

2.3.1 Form Performance Testing and Dissolution Modeling

Major Technical Accomplishments

- Single-pass flow-through (SPFT) tests on a ^{238}Pu -doped pyrochlore-rich composition at pH = 2 and 90°C indicate that the apparent dissolution rate of this material is ~1,000x faster than the ^{239}Pu -doped and 'cold' analogue material. It is not yet clear if these rates are valid (i.e., whether the increase in rate is due to radiation damage or some other effect). The ^{238}Pu sample now shows unambiguous evidence of radiation damage in x-ray diffraction measurements.
- Results from the SPFT tests (pH = 2, T = 90°C) with pyrochlore, pyrochlore-rich, zirconolite, and brannerite materials indicate that dissolution rates of heavy-ion bombarded specimens are faster than the undamaged specimens. The largest effect is observed for the brannerite specimens, for which the ion-bombarded specimen is dissolving at a >10x higher rate than the undamaged brannerite specimen.

Significant Issues and Risks

We do not yet understand the reason for much higher SPFT dissolution rate measured on the ^{238}Pu -bearing sample.

2.3.2 Thermodynamic Data Determination and Validation

Major Technical Accomplishments

This task is complete.

Significant Issues and Risks

Reconnaissance experiments conducted at PNNL in late FY00 indicated that the solubility of Hf is strongly enhanced by the presence of carbonate. This behavior was totally unexpected, and could have important implications as to the mobility of Hf (the backup neutron absorber) under repository conditions. Our current plans and funding call for termination of this task in FY01. We will reassess the appropriateness of this plan and make a recommendation as to the continuation of this task when final budgets are available.

2.3.4 Form Qualification and Repository Interactions

Major Technical Accomplishments

No significant results to report.

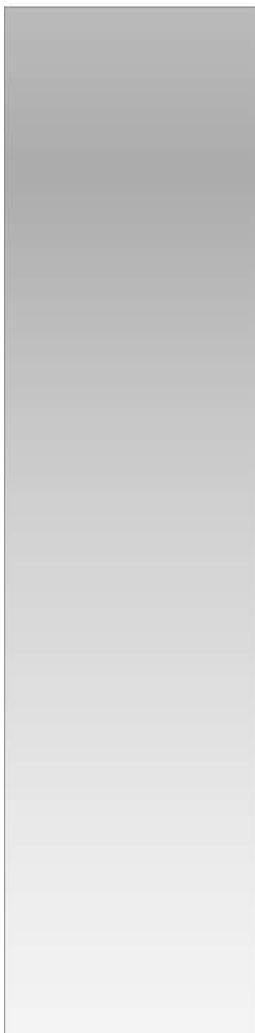
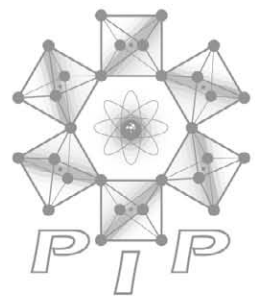
Significant Issues and Risks

The roles and responsibilities of NN, EM, and RW remain unclear with respect to the “ownership” of the IPWF, and this continues to impede finalization of the Plutonium Immobilization Product Specifications (PIPS).

3 Technology Transfer

Major Technical Accomplishments

Planning for the combined independent design and technology review of the PIP program is underway.



Report on Cost, Schedule, and Technical Progress

1 *Pre-Design Phase Activities*

1.2 DOCDR

Participants: LLNL and WSRC

Summary of Progress

DOCDR, Rev. 3, is awaiting final sign off sheet from NN-62.

Cost Performance

The LLNL variance of -13% reflects the currently (July D&T Plan) underestimated scope at LLNL for this effort in FY01. The task is complete with the incorporation of MD comments. A review copy of the DOCDR is with NN-62 awaiting signature.

Schedule Performance

The DOCDR effort is now complete except for receipt of the NN-62 sign off page and printing.

Issues and Risks

None.

2.1 Program Management

2.1.1 Technical Project Office

Participants: LLNL, WSRC, ANL, and PNNL

Summary of Progress

- TPO has begun to evaluate optional planning cases in the event that the actual FY01 budget falls substantially short of the request.
- TPO and sites have begun responses to comments from NN-62 on the July 31, 2000 revision of the integrated D&T plans.

Cost Performance

No significant cost variance.

Schedule Performance

No significant schedule variance.

Issues and Risks

The D&T program is operating under budget authority that is substantially less than the budget allocation identified in the FY01 AOP. If additional funding is not provided in December, work on many tasks will have to cease, especially at LLNL.

2.1.2 Quality Assurance

Participants: LLNL, WSRC, ANL, and PNNL

Summary of Progress

Technical Project Office

The TPO QA Office performed the first annual audit (PIP D&T TPO Audit 01-01) of the LLNL PIP QA Program. One Corrective Action Report and three Observations were issued as a result of the audit.

Project Participants

Argonne National Laboratory (ANL) continued the revision of technical procedures to be in compliance with the revised ANL QA Plan.

Lawrence Livermore National Laboratory (LLNL) reviewed and updated LLNL PIP D&T quality implementing procedures, logs and databases in preparation for the TPO audit. The PIP TPO D&T QA Office performed the first annual audit (A01-01) of the LLNL QA Program. One Corrective Action Report (concerning inadequacies in the continuing implementation of QARD requirements in QA programs procedures and documents) and three Observations were issued as a result of the audit.

Pacific Northwest National Laboratory (PNNL) performed the annual turnover of PIP QA records to the PNNL Records Center. A corrective actions response was submitted to the TPO QA Manager for the Corrective Action Report issued as a result of the TPO QA audit of the PNNL QA program, TPO QA Audit 00-04.

Westinghouse Savannah River Company (WSRC) issued three QA surveillances reports. These reports covered the Ceramic Prototype Test Facility, Measurement and Test Equipment for Immobilization Technology Section, and Laboratory Notebooks at CETL for CPTF task activities. Corrective action responses to the Observations noted in PIP D&T TPO QA Audit 00-003 were finalized. A Software Quality Assurance Plan covering the life cycle development and use of the Plutonium Immobilization Project Furnace Data Acquisition System was developed.

Cost Performance

- PNNL had a variance of -11% (under spent) for the QA task due to estimated cost for labor expense not being reported in the December timeframe as originally projected. This will not impact the overall budget for this task
- WSRC had a variance of +120% (over spent) for the QA task due to an annual QA subcontract lien. The overrun will be reduced throughout the year as labor costs are collected against the lien.
- No significant cost variance for TPO, ANL or LLNL.

Schedule Performance

No significant schedule variance for any participant.

Issues and Risks

None.

2.1.3 Document Control

Participants: LLNL and WSRC

Summary of Progress

- The DCC updated the Master Report, which lists documents received by the DCC through October 2000 for inclusion in the annual report.
- The DCC annual report is awaiting issue.

Cost Performance

No significant cost variances.

Schedule Performance

Milestone 1.3a/FY00, *Provide DCC annual report*, scheduled for September 2000, will be completed in December. Limited resources and higher priorities have taken precedence over this report. The schedule for this report does not impact the overall schedule.

2.2 D&T for Design

2.2.1 Technical Support and Integration

2.2.1.1 Feed Materials Characterization and Blending

Participants: LLNL and WSRC

Summary of Progress

- LLNL responded to questions from NN-62 based on data in the classified draft of the RFETS feed streams evaluation, *A Critical Analysis of the Rocky Flats Plutonium Inventory*. Plans for finalizing the document, including a scheduled meeting for review by RF and WSRC personnel, were postponed due to the task leader's accident and subsequent unavailability.
- WSRC and DOE-EM jointly assisted NN-62 in identifying DOE weapons-grade materials that are "committed" for transfer to Disposition (PDCF/MOX or PIP) to support the U.S.-Russian bilateral agreements. NN-62 was concerned that increased disposal to the Waste Isolation Pilot Plant could impact the U.S. commitment for 34 MT total, including at least 8.4 MT of weapons-grade material for feed to PIP. Initial study showed that sufficient material was available to allow NN-62 to concur in the EM decision to dispose Pu-bearing fluorides to WIPP.
- Final publication of the RFETS materials evaluation is expected for February. Further work on developing the Feed Materials Database, and preparation of the FY01 Feed Materials Report, was suspended. The suspension was due to transfer of the existing database from LLNL to SRS, transfer of item-level data from RFETS to SRS, and availability of the end-of-1999 DOE Nuclear Materials Inventory Assessment.

Cost Performance

- No significant cost variance at LLNL.
- WSRC was overspent by 15% (\$3,462) due to acceleration of NN-62 support activity.

Schedule Performance

Due to the task leader's accident, Milestone 2.1/1/FY00, *Revised draft of the feed materials characterization report*, is on hold at least until February. Information from the draft will be provided on an as-needed basis to minimize schedule impacts.

Issues and Risk

- In order to perform critical planning studies, Pu materials data from disparate sources must be consolidated. These studies include an analysis of the impacts of different timings proposed for processing the inventories that are covered by, or not covered by, the U.S.-Russian agreement. These

scenarios could affect equipment choices, operating plans, and even acceptance criteria.

- The reassessment of the RFETS data to evaluate the impact on Immobilization of the proposed RFETS consolidation program has stretched out the transition of this task to SRS from LLNL. This stretchout can be accommodated in FY01 with no impact to the A/E start date. However, the FY00 carryover will be needed to complete the task in FY01.
- PIP continues to work to confirm the quantities of plutonium that each site will transfer to MD for disposition. Major sites are still evaluating disposing some inventories to WIPP (instead of transfer to PIP), making it uncertain whether enough plutonium is firmly committed to MD to meet the strict requirements of the U.S.-Russian agreement. Decisions on MD-versus-WIPP disposition are on the critical paths for some EM stabilization plans, e.g., the RFETS closure plan, and decisions made at one site can affect MD's acceptance plans for other sites.

2.2.1.2 Proliferation Resistance

Participant: LLNL

Summary of Progress

Reviewed the National Academy of Science's report "The Spent-Fuel Standard for Disposition of Excess Weapon Plutonium: Application to Current DOE Options" for impact on PIP

Cost and Schedule Performance

The LLNL variance of 100% reflects the fact that the MD response to the NAS report has not yet been decided. It was anticipated in the July D&T plan that the activity would begin in December.

Schedule Performance

A firm schedule for a study has not been established. The variance does not have an impact on the overall schedule at this time.

Issues and Risk

\$100K in budget for this task was provided to Task 2.3 (now 2.2.1.2) in late September. The funding arrived too late for use in FY00, but the carryover is needed in FY01 for the development of a response to the NAS report.

2.2.1.3 Systems Integration and Cross-Cutting Functions

Participants: LLNL and WSRC

Summary of Progress

- WSRC updated 14 draft SDDs and prepared them for issue to LLNL for review.
- WSRC and LLNL implemented a government assisted design (GAD) matrix with more than 30 design items to aid in preparing the SDDs and assigning design responsibility to the A-E and/or D&T project.

- The WSMS evaluation of shielding requirements for PIP, based on the 13 MT layout, is in progress. The evaluation is expected to be completed in February 2001.
- The WSRC Safeguards group has completed a preliminary vulnerability assessment and written a draft Security Requirements Identification (SRI) document. A security review was held with DWPF personnel to review the SRI as it applies to DWPF. The SRI has been approved by WSRC and DOE-SR. The contents of the SRI have been incorporated into an SDD-ready format, which will be held at SRS until the security posture for all PDP projects is established by DOE-NN.

Cost Performance

No significant cost variance.

Schedule Performance

The drafts of Technical Support SDDs (milestone 2.2.1.3/FY01/a) are in final editing and review. The edit and review process has required more effort than anticipated in August when the schedule was established. The SDDs are expected to be issued in February 2001. The later issue date is not expected to impact the overall design schedule.

Issues and Risk

None.

2.2.1.4 Material Transport System

Participant: WSRC

Summary of Progress

The draft SDD has been modified to reflect the scope change to a 13 MT throughput facility. Comments from LLNL have been incorporated in the final draft.

Cost Performance

No significant cost variance.

Schedule Performance

Milestone 2.2.1.4/FY01/a, Provide Draft SDD, was due 12/31/00. Completion of this milestone has been delayed to February 2001 due to limited resources available to complete the entire SDD package. The delay should not likely affect the overall project schedule because the two independent reviews and start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.1.5 Waste Handling System

Participant: WSRC

Summary of Progress

- The draft SDD has been modified to reflect the scope change to a 13 MT throughput facility. Comments from LLNL have been incorporated in the final draft.
- The Waste Generation Report has been initiated. This report is scheduled to be completed in January 2001.

Cost Performance

This task is under spent by \$3,364 (24%) due to limited resource availability. This cost variance will not adversely impact the project.

Schedule Performance

- The draft SDD milestones will be delayed until February 2001 because of protraction of the edit and review process. This should affect the PIP project schedule.
- Milestone 2.2.1.5/FY01/a, *Complete Waste Generation Report*, was due in December 2000. This report will be delayed one month due to limited resource availability. The delay is not likely to affect the overall project schedule because the two independent reviews and start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.2 Immobilized Form Development

2.2.2.3 Process Control Model Development

Participants: LLNL and WSRC

Summary of Progress

- A spreadsheet is being assembled as the basis for the preliminary Process Control Model. This spreadsheet includes as inputs the composition and isotopics of the plutonium oxide feed materials. The output is a calculation of the product composition, isotopics, phase assemblage, density, and pellet integrity. The spreadsheet also checks the feed impurity and processing specifications. (LLNL)
- Three of the forty full-scale Hf-Ce-Ce impurity compositions were examined using SEM/EDS. Results were transmitted to LLNL so that phase compositions could be compared with samples prepared with fewer impurities. (WSRC)
- A Form Development meeting was held at LLNL to review progress and to develop a path forward for future work to support the refinement of the

PCM. A review of the statistical impurity testing indicated that dry processing was preferred for samples with high impurity contents. It appears that the larger the sum of the impurity (namely volatile impurity) and moisture content the more likely the pellet will crack during the firing cycle. A suggested list of tasks for the Process Development and NDE tasks was also generated for the remainder of FY01 and FY02. Experimental testing in the Form Development activity appears to be complete. (LLNL, WSRC)

Cost Performance

- No significant cost variance at LLNL.
- WSRC is under spent by 26% because data analysis activities associated with FY00 testing were delayed. The meeting held at LLNL in December will be used to direct FY01 work and it is expected that activities will ramp up. This will not impact overall schedule performance.

Schedule Performance

Milestone 2.2.2.3/FY01/a. *Delivery of the "Preliminary Process Control Model"* in March 2001 is on schedule.

Issues and Risk

The most precise SEM at SRS will be taken out of service to be installed in a glove box. In the long term this will benefit PIP, but access to the microscope will be limited until July 2001. (WSRC)

2.2.3 Plutonium Conversion Process and Equipment Development

2.2.3.1 Material Receipt and Storage

Participant: WSRC

Summary of Progress

The draft SDD has been modified to reflect the scope change to a 13 MT throughput.

Cost Performance

No significant cost variance.

Schedule Performance

Milestone 2.2.3.1/FY01/a, *Provide Draft SDD*, due 12/31/00, has been delayed to February 2001. The delay is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.3.3 Material Size Reduction

Participant: WSRC

Summary of Progress

WSRC recently was given the responsibility for development of the SDD for Material Size Reduction. This task will be initiated in January and will be completed in February 2001.

Cost Performance

This task was under spent by \$7,500 due to limited resource availability. This cost variance will not adversely impact the project.

Schedule Performance

Milestone 2.2.3.3/FY01/a, *Provide Draft SDD*, due 12/31/00, should be completed in February 2001. The delay, due to limited resource availability, should not affect the overall project schedule because start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.3.4 Material Unpackaging and Sorting

Participants: WSRC and LLNL

Summary of Progress

- The draft SDD has been modified to reflect the scope change to a 13 MT throughput, and is undergoing review and editing.
- BNFL has submitted a response to the request for proposals to purchase a Dustless Oxide Transfer Device. The response indicates that they believe an off-the-shelf design will suffice and sent sketches for evaluation. BNFL has not yet provided a bid. The other two bidders have not yet responded to the request for proposals.

Cost Performance

This task was under spent by \$4,409 (16%) due to limited resource availability. This cost variance will not adversely impact the project.

Schedule Performance

Milestone 2.2.3.4/FY01/a, *Provide Draft SDD*, due 12/31/00, should be completed in February or March. The delay, due to limited resource availability, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risks

None.

2.2.3.6 Metal Conversion

Participants: LLNL and WSRC

Summary of Progress

- The metal conversion glove box was anchored to the floor in Room 1006. The glove box was aligned with the tunnel section extending from the East wall in Room 1006 to which it provides support.
- Work continued on assembling subsystems in the metal conversion glove box. Over 90% of the mechanical systems and pneumatic control line plumbing required for remote operations were completed.
- Cold tests of the oxidation system continued. A new frit design was tested and was judged to be satisfactory for the pulsed bed and pneumatic dustless transfer system. Tests began to determine the operating parameters and any design changes required on the halo blow back system used to keep the crucible flange clean.
- Installation began on the support systems for the glove box. The first instrumentation panel containing the hydrogen and oxygen sensors was installed in Room 1006.

Cost Performance

- This task is over spent at LLNL by 99%, or \$551,294, because additional personnel had to be added to the metal conversion task starting in November. The budget forecast assumed there would be a slow-down in effort resulting from the Christmas and New Year's Holidays, but in actuality the team worked the majority of the month, taking a minimal amount of vacation time. Additionally, a WSRC lien for personnel was added to the LLNL budget. A further cost overrun is anticipated in January.
- This task is under spent at WSRC by \$20,000 due to limited resource availability. This cost variance will not adversely impact the project.

Schedule Performance

- For FY99 Milestone 5.6.a, the report *Perform Feasibility Demonstrations on Pu-Al Alloys* was written and is being reviewed.
- Milestone 2.2.3.6/FY01/a, *Move System Into Radiation Material Management Area*, has been completed. A summary report is undergoing review.
- Milestone 2.2.3.6/FY01/b, *Provide Draft SDD*, due 12/31/00, has been delayed until March 2001. This delay, due to limited resource availability, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

The current success-oriented schedule does not include intangible issues such as DNFSB reviews of the Plutonium Facility. DOE Oakland representatives, members of the facility staff, and programmatic personnel reviewed the metal conversion schedule. The current schedule reflects our best planning based upon

the remaining work, facility staff availability, and DOE Oakland review requirements.

2.2.3.7 Impure Oxide Feed Preparation

Participant: LLNL

Summary of Progress

- A Facility Engineering Design Review (FEDR) was completed for installation of the dustless transfer (DTU) unit and RIAR Washer in B332, Room 1378.
- Safety documentation required to bring both the DTU and the RIAR Washer into service are well underway.
- Major components for the DTU such as the motor, blower assembly, and pneumatic frits have been ordered.

Cost Performance

- No significant cost variance at LLNL.
- This task is under spent by \$8,949 at WSRC due to limited resource availability. This cost variance will not adversely impact the project.

Schedule Performance

- Milestone 5.7.1/FY00, *Obtain and Install RIAR Salt Washer*, is late because of a shortage of facility and programmatic support personnel. Completion of the milestone is currently seven months behind schedule. This should not impact availability of data for preliminary design because of the expected delay in PIP design start due to recently announced FY01 budget cuts.
- Milestone 2.2.3.7/FY01/a, *Provide Draft SDD*, due 12/31/00, will be delayed until February 2001. This delay, due to limited resource availability, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

Facility personnel are still reviewing the seismic safety note and the USQ Screening. Further delays to the schedule are expected.

2.2.3.8 Material Characterization

Participants: LLNL and WSRC

Summary of Progress

- The repaired fume hood arrived from Lab Fabricators on December 11th in excellent condition.
- Plant Engineering personnel completed moving the fume hood into B332, Room 1006 and seismically anchoring it to the floor.
- Facility staff completed approval of the USQ Determination to penetrate the exterior wall of Room 1006 for an argon gas line.

- A USQ Screening addressing the addition of all the material characterization support equipment (fume hood, ventilation ducts, and HEPA housings) to Room 1006 has been drafted.

Cost Performance

- This task is over spent at LLNL by 17 %, or \$26,985, because of manpower expenses incurred as a result of higher than expected installation costs posted in late December. The overage should dissipate after the installation of the fume hood is completed in February.
- This task is under spent at WSRC by \$8,974 (17%). Material Characterization is a level of effort task supporting LLNL activities. The cost variance has no impact on project deliverables.

Schedule Performance

No significant schedule variance.

Issues and Risk

None.

2.2.3.9 Material Control and Accountability

Participant: WSRC

Summary of Progress

The MC&A draft SDD has been modified to reflect the scope change to a 13 MT throughput facility. Comments from LLNL have been incorporated in the final draft.

Cost Performance

No significant cost variance.

Schedule Performance

Issue of the draft SDD, due 12/00, has been delayed to February 2001 as a consequence of a protracted review and edit schedule.

Issues and Risk

None.

2.2.3.10 In-Process Storage Vault

Participant: WSRC

Summary of Progress

The draft SDD has been modified to reflect the scope change to a 13 MT throughput. Comments from LLNL have been received and incorporated in the final draft.

Cost Performance

No significant cost variance.

Schedule Performance

Milestone 2.2.3.10/FY01/a, *Provide Draft SDD*, due 12/31/00, has been delayed to February 2001. This delay, due to limited resource availability, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.4 First-Stage Immobilization Process and Equipment Development

2.2.4.1 Ceramic Feed Blending and Batching

Participant: WSRC

Summary of Progress

WSRC is in the process of contracting COGEMA to perform blending studies with simulated PIP powders in an existing blender. These tests will include verifying a powder metering system. WSRC modified the procurement package to include the blender test plan, obtained approvals, and submitted the package to SRS Procurement where it is currently under review.

Cost Performance

This task is under spent by \$44,726 (48%) due to the delays in placing the blender test procurement.

Schedule Performance

- Milestone 2.2.4.1/FY01/a, *Provide Draft SDD*, due 12/31/00, has been delayed to February 2001. This delay, due to limited resource availability, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.
- Milestone 2.2.4.1/FY01/b, *Complete Blender Test at Vendor*, will not be met due to delays in placing the order and the time required by COGEMA to prepare for the tests. The delay should not affect data for PIP design because of the expected delay in design start due to FY01 budget cuts.

Issues and Risk

The blender procurement will be delayed to FY02 if funding is not available.

2.2.4.2 Ceramic Process and Equipment Development and Testing

2.2.4.2.1 Ceramic Process Development

Participant: LLNL

Summary of Progress

- A meeting with the form development team was held in December to discuss the results to date regarding impurity testing with full-scale Hf/Ce/U and Hf/Ce/Ce pucks at LLNL. Additional tests to be performed were identified. These tests are being performed in conjunction with the impurity limit testing being performed at WSRC and will assist in verification of the impurity limits for the process. In addition to the composition variations, processing conditions related to pressing and sintering are also being investigated for their effects on the final product.
- Limited binder burnout testing is being performed on the pucks containing impurities to determine the effect of the binder burnout temperature on the puck integrity.

Cost Performance

A cost variance of 51% (about \$30k) occurred due to employees charging the wrong account. These charges are being reapplied to the correct account.

Schedule Performance

Activities are proceeding on schedule for winding up the process development activities.

Issues and Risk

The biggest unknown in the process development area is the plant-sintering schedule. Work is proceeding at LLNL with the binder burnout furnace and at Clemson with the plant-prototypical furnace to resolve this issue.

2.2.4.2.2 Pu Ceramic Test Facility (PuCTF)

Participants: LLNL and WSRC

Summary of Progress

- The moving and installation of the PuCTF began. The furnace box and press were the first subsystems to be installed. The furnace box was broken down into two box sections for shipping and clearance through the doorways. The puck handling robot was left installed, but blocked in a secure position. A template to locate the press bolt holes on the floor plates was made and aligned. The predrilled holes permitted an immediate method of seismically anchoring the press. After press installation, the Granulator glovebox was brought into the room and restrained with temporary seismic hold-downs. This box was brought in three pieces: top hat, main box section and the stand.
- The remainder of the PuCTF (excepting the Control System which is undergoing final programming and check out) in B-241 was disassembled and is ready for moving and installation. The attritor heads were removed from

the stands and the stands removed from the box. The buckets remain in the box and are securely blocked.

- Integration of the Supervisory Control System network communications continues. Some difficulties remain in using Modbus protocol to communicate with the Attritor PLC., and with the RS Linx protocol to communicate with the Granulator Allen Bradley PLC. It is anticipated the Modbus problem will be overcome before the Attritors are powered down for disassembly the 2nd week in January. It is believed that an upgrade of RS Linx and RS Logic software will overcome the Allen Bradley communications problem. Hopper Transport robot programming was modified: (1) to provide a means of moving both hoppers off their respective scales so that they may be calibrated manually and (2) to provide the capability to park the robot actuators in a convenient location during shutdown to provide for expeditious homing on startup. Instrumentation and Control (I&C) documentation continues. I & C drawings have been completed for all except the Hopper Transport.

Cost Performance

- No significant cost variance at LLNL.
- This task is under spent by \$20,061 (19%) at WSRC. This task is a level of effort supporting LLNL activities.

Schedule Performance

No significant schedule variance.

Issues and Risk

Accomplishing work on a timely basis in The Plutonium Facility remains a concern as demonstrated by the longer than anticipated time it took to complete the room preparation.

2.2.4.2.3 Ceramic Prototype Test Facility (CPTF)

Participants: WSRC and Clemson

Summary of Progress

- A fully integrated furnace run using annular space cooling air, purge air, water cooling, and the exhaust gas system was performed. The furnace run used 5 scfm of purge air during binder burnout and during cool down. As a consequence, the furnace cycle time was reduced from approximately 46 hours to 24 hours. The heavy, four-wall trays used in the test showed no structural problems (these trays have now completed four sintering cycles with no apparent degradation). During the test, however, half of the trays of pucks did not completely sinter. The cause of this under sintering is being evaluated. Work is underway to finish evaluating the results of the test data and to plan the next furnace run.
- Clemson Environmental Technologies Laboratory (CETL) has responded to the Scope of Work Statement for the design, fabrication, and construction services for the CPTF. The Scope of Work outlines facility modifications/additions necessary to install full-scale equipment associated with first stage immobilization. It is anticipated that DOE-SR will release the

funding for the contract in January and the construction firm will be brought on board shortly thereafter.

- The delivery for the HSA-20 attritor is on schedule for February.
- The specifications for the CPTF tumble granulator have been issued for vendor response. It is anticipated that a response will be received in January, and the anticipated delivery date is the summer of 2001.
- The contract for the 15 ton press has been awarded and assembly drawings will be supplied at the beginning of January. A meeting of the press team will be held after the drawings are received and then a subset of the team will meet with the vendor to discuss any changes/comments. An additional procurement for upgrades to the press, including the dust control system and direct feed modification, has been transmitted to CETL.
- The four wall trays purchased in FY99 have high side walls so that reticulated zirconia ceramic plates could be installed to inhibit chemical interaction with the pucks. Evaluations are being performed to see if the overall stack height can be reduced by approximately 3 inches if a zirconia thermal spray coating is used instead of the reticulated ceramic.
- The Task Technical and QA Plan for the CPTF has been updated to reflect the changes in scope and personnel roles and responsibilities and is currently being reviewed. Included in the changes are the controls to be used for experiments to support repository qualification and the plant design (FDD and SDD).
- The Software Quality Assurance Plan for the Clemson Furnace Data Acquisition System was issued.

Cost Performance

This task is under spent by 19% because the team is awaiting the awarding of the CPTF construction contract to CETL. Once the contract is awarded it is expected that efforts will increase significantly. Additionally, several CPTF team members took more vacation time over the holidays than originally forecasted. These variances will not impact the task schedule or deliverables.

Schedule Performance

No significant schedule variance.

Issues and Risk

- Furnace cycle time continues to be the biggest area of risk. However, recent test results are encouraging. Attempts are being made to optimize the furnace heating/cooling rate with consideration for the furnace components, sintering furniture, and pucks. Testing in the CPTF prototype furnace will continue to provide insight into the parameters affecting the furnace cycle time, including whether puck integrity is the limiting factor.
- Changes to the existing furnace tray configuration could impact the overall CPTF schedule if the design of the tray stacker is affected.

2.2.4.3 Puck NDE/MC&A for Process Control and SNM Accountability

Participants: LLNL and WSRC

Summary of Progress

The prototype x-ray diffraction system was received at WSRC and installation of the equipment in the SRTC lab has commenced.

Cost Performance

- There are no significant cost variances at LLNL.
- This task is under spent by 13% at WSRC because the prototype system installation is deferring major analytical work until January. An increase in effort is expected in January and subsequent months when testing commences with the prototype system. This will not impact the task schedule or deliverables.

Schedule Performance

The delay in NDE glovebox activation in the LLNL Pu facility should not delay the completion of the validation milestone.

Issues and Risk

None.

2.2.4.4 Recycle of Unacceptable Materials

Participant: LLNL

Summary of Progress

This task will be subsumed by Task 2.2.4.2.

Cost Performance

No significant cost variance.

Schedule Performance

No significant schedule variance.

Issues and Risk

None.

2.2.4.5 Can Loading

Participant: WSRC

Summary of Progress

- WSRC completed the draft SDD for Can Loading, revision E. The document is being routed for signatures.

- WSRC completed the 13 MT can loading computer simulation. The simulation shows the can loading robot working with two bagless transfer units as well as the latest can inspection concept.

Cost Performance

No significant cost variance.

Schedule Performance

Milestone 2.2.4.5/FY01/a, *Provide Draft SDD*, due 12/31/00, has been delayed to February 2001. This delay, due to limited resources, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.4.6 Can MC&A

Participant: WSRC

Summary of Progress

- The MC&A draft SDD has been modified to reflect the scope change to a 13 MT throughput facility. Comments from LLNL have been incorporated in the final draft.
- Baseline testing for the calorimetry system continues.

Cost Performance

This task is under spent by \$12,196 (63%) due to limited resource availability. This cost variance will not adversely impact the project.

Schedule Performance

Issue of the draft SDD has been delayed to February 2001 due to limited resources. This delay should not affect the overall project schedule.

Issues and Risk

None.

2.2.5 Second-Stage Immobilization Process and Equipment Development

2.2.5.1 Can-in-Canister System

2.2.5.1.1 Can-in-Canister Design and Assembly

Participant: WSRC

Summary of Progress

- All Phase 2 cold pour canisters have been filled with glass. The low pour rate and instrumented canisters have been cut and analyzed. The results of the analysis have been documented in the Phase 2 cold pour test report.
- One of the two proliferation canisters contained a known weld defect in the top head weld that was not repaired prior to pouring with glass; the plan being to rework the weld after the glass had been poured. A non-conformance report (NCR) was written and the rework of the defect has been completed. Another minor weld defect (underfill) was discovered during the analysis of the first one and a second NCR was issued to disposition that defect. Both NCRs have been closed and the affected proliferation canister has been returned to CETL for storage.
- The Can-In-Canister System Design Description was revised for the 13MT throughput of the Plutonium Immobilization Plant and was issued for comment. Comments have been dispositioned and Revision E of the system design description will be issued.
- The canister loading arm has been delivered to the site. The vendor provided assistance in setting up the arm in Building 305-A. Although there are no funds available to perform any developmental testing with the arm, there is funding to have the arm moved from its current storage location in Building 305-A to Building 773-50A. A contract has been let to enable the arm's original supplier to assist with preparing the loading arm for operation in its new location.

Cost Performance

No cost schedule variance.

Schedule Performance

Milestone 2.2.5.1.1/FY01/a, *Provide Draft SDD*, due 12/31/00, has been delayed to February 2001. This delay, due to limited resources, is not likely to affect the overall project schedule because the start of preliminary design will be delayed due to budget reductions announced in December.

Issues and Risk

None.

2.2.5.1.2 Canister Pour Analysis and Testing

Participants: LLNL and WSRC

Summary of Progress

- The Phase 2 Cold Pour Test report was issued, satisfying the 12/31/00 milestone, *Complete Phase 2 Cold Pour Test Report*.
- Work continued on the Cold Pour Test Task File. Most of the required documents have been filed. This Task File will be used mainly to provide Phase 2 test quality assurance documentation.
- The top weld on the second proliferation canister filled during the Phase 2 Test was approved by SRS Receipt and Inspection personnel.

Cost Performance

This task is under spent by \$38,374 (35%) due to anticipated undercharge from SCUREF. This cost variance will be corrected next month and will not adversely impact the project.

Schedule Performance

No significant schedule variance.

Issues and Risk

None.

2.2.5.1.3 Can/Magazine Storage Vault

Participant: WSRC

Summary of Progress

The Can/Magazine Storage Vault information in the Can-In-Canister SDD was revised for the 13MT throughput of the Plutonium Immobilization Plant.

Cost Performance

No significant cost variance.

Schedule Performance

No significant schedule variance.

Issues and Risk

None.

2.2.5.2 Canister Transport System

Participant: WSRC

Summary of Progress

The draft SDD has been modified to reflect the scope change to a 13 MT throughput.

Cost Performance

No significant cost variance.

Schedule Performance

Issue of the draft SDD will be delayed to February 2001 due to resource limitations. No significant impact to the PIP design schedule is anticipated.

Issues and Risk

None.

2.2.5.3 DWPF Receipt and Handling

Participant: WSRC

Summary of Progress

The draft SDD for DWPF Receiving and Handling was revised to reflect the 13MT throughput of the Plutonium Immobilization Plant.

Cost Performance

No significant cost variance.

Schedule Performance

Issue of the draft SDD will be delayed to February 2001 due to resource limitations. No significant impact to the PIP design schedule is anticipated.

Issues and Risk

None.

2.3 D&T for Form Qualification

2.3.1 Form Performance Testing and Dissolution Modeling

2.3.1.1 Radiation-Damage Sample Synthesis and Characterization

Participant: PNNL

Summary of Progress

- Analyses of the XRD results are nearly complete for the specimens that have been stored at room temperature. These results indicate that pyrochlore is susceptible to radiation damage. The diffraction peaks from these specimens show substantial broadening for the pyrochlore phase and a change from the cubic pyrochlore phase to the cubic fluorite phase. Damage also occurs to the zirconolite phase, but the damage does not appear to be as severe; diffraction peaks remain relatively sharp and unit cell parameters appear to remain constant with increasing damage (up to one year). There is a build-up of an amorphous phase that cannot be identified. However, this may be the result of the transformation of zirconolite to pyrochlore or the disappearance of the brannerite phase that was present in the original phase assemblage. Some fluorite (<10%) is also evident in the XRD for the zirconolite-bearing specimens.
- The large peaks in the XRD from zirconolite-rich baseline ceramics that were observed in the diffraction from specimens stored at 250°C were observed in a zirconolite-rich baseline specimen that had been stored at room temperature. These diffraction peaks were not reproducible even in the same specimen. We have made the initial conclusion that the intensity of these peaks is due to misalignment of the specimen in the diffraction beam. To remedy the alignment problem, we have developed an alignment tool to make the alignment easier.
- We have no specific test for friability in these specimens. This evaluation is left until the end of the test period when we examine the specimens for microcracking. However, circumstantial evidence suggests that the specimens are more friable than when they were first made. When preparing the specimens for the PUF and SPFT, we had a difficult time obtaining particles of the correct size distribution. The grinding techniques that had been used previously resulted in a very fine particle distribution and size reduction occurred much more easily than previously.
- In the short-term static dissolution test (MCC-1, 90°C, 3 d), the amounts of Pu found in solution are greater than those found during the initial characterization of the same specimens 1 year ago. The amounts released range from 0.05 g/m² for the ²³⁸Pu-bearing, phase-pure pyrochlore to 0.6 g/m² for the ²³⁸Pu zirconolite-rich baseline. During the initial characterization of these specimens 1 year ago, the amounts of Pu released ranged from 1x10⁻⁵ g/m² for coarse ²³⁸Pu zirconolite to 0.02 g/m² for the ²³⁸Pu pyrochlore-rich and ²³⁸Pu zirconolite-rich baseline ceramics. The analyses for the other constituents are continuing.

Cost Performance

This task is overspent by 12%. This is due to unanticipated machine work that was needed for the specimen storage vessels and XRD specimen alignment tools.

Schedule Performance

We are on schedule for the milestone 2.3.1.1/FY01/a (a letter report on the results from the characterization and testing of the radiation damage specimens).

Issues and Risk

None.

2.3.1.2 Short-Term Corrosion Tests

Participant: ANL

Summary of Progress

- A series of MCC-1 tests with the baseline (A0) ceramics were initiated and terminated in August. The tests were conducted at 90°C in deionized water for 1, 3, 5, 7 and 42 days using PDA-Teflon vessels. The pH values of the test leachates and blanks are between 5 and 6. Solutions from these tests are being analyzed; results are expected in early January.
- Planning continued for starting the fabrication of samples for TCLP testing. A safety review is being finalized, and a task plan has been completed.

Cost Performance

This task is overspent by 73% (\$24.2K). This is due to front end loading of this task at the beginning of the year. Once the TCLP tests have been completed, very little effort will be spent on short-term testing. Therefore, this will not impact the overall budget for this task this year.

Schedule Performance

There has been a delay in initiating the planned TCLP tests due to the need to conduct new safety analyses in the laboratory where the samples will be fabricated. Because of this, it is likely that the associated milestone (2.3.1.2/FY01/a, Document results of TCLP tests) will be 1 to 2 months late. This should have no significant effect on the overall project schedule.

Issues and Risk

Two measurements required in the fabrication of the TCLP samples cannot currently be completed with the appropriate QA pedigree. The dimensions of both green and sintered ceramic pellets cannot be made until a set of calipers is calibrated and verified. Calipers have been sent to a QA-qualified vendor for calibration. The calcining and sintering temperature cannot be reported until the furnace is calibrated with a NIST-traceable thermocouple. An approved vendor in the Chicago area is fabricating a NIST-traceable thermocouple.

2.3.1.3 Long-Term Corrosion Tests

Participant: ANL

Summary of Progress

- A 182-day PCT-B test with the A0-LLNL ceramic, scheduled for termination in October, was terminated in November. Leachant and strip samples have been submitted for metals analysis; transmission electron microscopy analysis of the colloids sample has begun. Data from this test will be compared to data from the 98-day test with the same ceramic and to data from tests with the B3-13 impurity-bearing ceramic.
- A 728-day PCT-B test with A0-ANL will be terminated in January. Data from this test will be compared to data from previous tests with the same ceramic to describe reaction progress. The reacted ceramic will be examined to determine whether the brannerite is being preferentially dissolved. Preferential dissolution of brannerite was observed during the reaction of a zirconolite-rich ceramic, and was thought to lead to increased release of Gd and Pu from that ceramic.

Cost Performance

No significant cost variance.

Schedule Performance

Work is on schedule for delivery of milestone 2.3.1.3/FY01/a, *Document results of long-term testing of ceramic.*

Issues and Risk

None.

2.3.1.4 Integrated Corrosion Tests

Participants: ANL and PNNL

Summary of Progress

- The long-term unsaturated "drip" tests with the Hf-Pu-U baseline ceramic were scheduled to be sampled during August, but has been delayed due to laboratory modifications. We will sample the tests in January. Solution analyses will include pH and cation concentrations. Colloid analyses will include sequential filtration, dynamic light scattering, and TEM. Solids analyses will include SEM and TEM of the reacted particles. (ANL)
- A set of long-term unsaturated "drip" tests with the Hf-Pu-U impurity (B3-13) ceramic will be initiated when material becomes available from LLNL. A task plan has been written and approved. The data from these tests will be compared to data from tests with the A0 ceramic. These data will allow us to evaluate how the presence of impurities and silicate phases in the ceramic affects their corrosion behavior. (ANL)
- A series of 200°C vapor hydration tests with the B3-13 impurity ceramic will also be initiated when the material is available. Data from these tests will be compared to data from similar tests with the A0 ceramic. These data will

allow us to evaluate how the presence of impurities and silicate phases in the ceramic affects their corrosion in these high temperature tests. The B3-13 ceramic contains an amorphous silicate phase in intimate contact with the titanate phases. Therefore, the results of a vapor hydration test with this material will be interpreted in terms of reactions between the silicate phase and the titanate phases. (ANL)

- A new oven has been designed and built in the testing glovebox. The completion of this oven will allow us to move the unsaturated drip tests into the glovebox. The oven is complete and is currently being tested. A revised safety review and QA documentation are being prepared. (ANL)
- The two PUF columns for the last Integrated Corrosion Tests were returned from an external site with precision machine milled seal surfaces. The columns passed pressure tests and were loaded with ceramic and glass. Test startup will occur shortly. (PNNL)

Cost Performance

- Spending for this task is 24% (\$25.7K) lower than planned at ANL. This is due to a smaller than anticipated effort being spent on this task this month. This will not impact the overall budget for this task this year.
- This task is overspent by 20% at PNNL. This is due to the spending on this task occurring at a higher rate for the first quarter in order to accomplish scope from FY00. Two PUF tests were started with the intent of allowing the tests to run without any extensive data collection other than those collected with the computer. Following the first quarter, spending is expected to decrease commensurate with the maintenance level of the experiments. The FY01 spend plan will be adjusted to support the revised rate of spending noted above.

Schedule Performance

- Work is on schedule for the ongoing drip tests at ANL for milestone 2.3.1.4/FY01/b, Issue report on status of drip tests; however, initiation of new vapor hydration and drip tests has been delayed due to the inability to ship Pu-bearing samples from LLNL to ANL because of a lack of approved shipping containers. This will limit the amount of information in the milestone report.
- We are a couple of months behind schedule for the start of the test with ²³⁸Pu-pyrochlore baseline ceramic, but the preliminary report (milestone 2.3.1.4/FY01/b) is on schedule. The duration of the tests reported on in this report, however, will be shorter than planned.

Issues and Risk

Ceramic material is needed from LLNL to initiate new vapor hydration and unsaturated drip tests. (ANL)

2.3.1.5 Single-Pass Flow-Through Tests

Participants: LLNL, ANL, and PNNL

Summary of Progress

- Testing is continuing on the ^{238}Pu -doped pyrochlore-rich composition at pH = 2 and 90°C. So far, the apparent dissolution rate of this material is ~1,000X faster than the ^{239}Pu -doped and 'cold' analogue material, but it is not yet clear if these rates are valid. (PNNL)
- Dissolution experiments with ^{239}Pu -doped pyrochlore and pyrochlore-rich materials over the pH interval 2-10 at 90°C are running. No unusual dissolution behavior has been observed so far. (PNNL)
- Results from the SPFT experiments (pH = 2, T = 90°C) with pyrochlore, pyrochlore-rich, zirconolite, and brannerite materials indicate that dissolution rates of heavy-ion bombarded specimens are faster compared to the undamaged specimens. The largest effect is observed for the brannerite specimens, wherein the ion-bombarded specimen is dissolving at >10X higher rate than the undamaged brannerite specimen.
- Dissolution experiments with non-radioactive pyrochlore and pyrochlore-rich materials over the pH interval 2-10 at 90°C are complete. Dissolution of both materials exhibit a pH-dependence with the minimum near pH = 8.
- A new TEM analyst has examined samples from two of the SPFT ceramics. Although images were collected, the resolution of the CCD camera is inadequate; multibeam GIF images are needed to obtain the high-resolution images needed to see alteration layers. Training of the new analyst on the operation of the GIF has been delayed. (ANL)
- All the remaining SPFT tests have been shut down and all archived samples sent in for analysis. Reacted solids will be archived for future analysis. (LLNL)

Cost Performance

- Support for the examination of the SPFT samples at ANL is not directly funded. Effort spent on this work is being taken from the long-term and integrated testing tasks. (ANL)
- There are no significant cost or performance variations to report at PNNL.
- This task is 11% overspent at LLNL. This is due to a heavy load of analyses associated with the shutdown of the SPFT experiments. The spending rate will decrease in the future.

Schedule Performance

- PNNL is on schedule to deliver milestone 2.3.1.5/FY01/a, Update the repository data package with results from the SPFT on radiation damage specimens and LLNL tests.
- A draft of the FY00 milestone FY00/4.1.2, Update SPFT report with results from longer-term testing, is complete, and is undergoing internal review. This

report was delayed due to illness and unplanned leave by personnel funded under this task in FY00.

Issues and Risk

None.

2.3.1.6 Dissolution Model Development

Participant: LLNL

Summary of Progress

The second interim modeling report will be completed by the end of January.

Cost Performance

No significant cost variance.

Schedule Performance

The FY00 milestone FY00/4.1.4, *Issue final report on model development for repository PA*, continues. This report was delayed due to illness and unplanned leave by personnel funded under this task in FY00. The report is now expected to be completed by January 2001

Issues and Risk

None.

2.3.2 Thermodynamic Data Determination and Validation

2.3.2.1 Aqueous Solubility/Speciation Measurements

Participants: LLNL and PNNL

Summary of Progress

There is no new work planned in this task for FY01. The only ongoing activities relate to the completion of two FY00 milestones, and the transfer of notebooks and records to QA and the records center.

Cost Performance

No costs to report. Closeout costs for this task are included in the costs for the Form Qualification and Repository Interactions Task.

Schedule Performance

This task is complete

Issues and Risks

Reconnaissance experiments conducted at PNNL in late FY00 indicated that the solubility of Hf is strongly enhanced by the presence of carbonate. This behavior was totally unexpected, and could have important implications as to the mobility of Hf (the backup neutron absorber) under repository conditions. Our current plans and funding call for termination of this task in FY01. We will

reassess the appropriateness of this plan and make a recommendation as to the continuation of this task when final budgets are available. RW has been informed of these results and is looking into the potential impact on their analyses. Because Hf has been proposed as the primary neutron absorber for waste packages containing some DOE spent fuels, this result may have implications that extend beyond the Pu Immobilization Program.

2.3.2.2 Solid-Phase Enthalpy and Entropy Measurements

Participants: LLNL, UC Davis, and BYU

Summary of Progress

This task is complete.

2.3.4 Form Qualification and Repository Interactions

Participants: LLNL, WSRC, ANL, and PNNL

Summary of Progress

- A review on repository qualification was held at SRS with DOE EM and DOE RW personnel in December. The meeting included general discussions on DWPF issues as well as a review of the Pu Immobilization Program. DOE RW reiterated that their comments on the Plutonium Immobilization Product Specifications (PIPS) were for information only and they do not intend to perform a formal review. There was little discussion on programmatic issue regarding the ownership of the Immobilized Plutonium Waste Form (IPWF). It is unlikely that this issue will be resolved in the near term, thus, the PIPS will be issued as is after minor editorial corrections are made.
- Minor refinement of the draft Plutonium Immobilization Compliance Plan (PICP) continues at a low level of effort.

Cost Performance

- This task is under spent by 33% at SRS because personnel working on this task are primarily working on SDD updates
- This task is under spent by 11% at PNNL. The spend plan for this task is level loaded throughout the year. A variance has occurred this month as staff addressed needs in other programs. This will not impact the overall budget for this task this year.
- This task is under spent by 22% at ANL. The spend plan for this task is level loaded throughout the year. A variance has occurred this month as staff addressed needs in other programs. This will not impact the overall budget for this task this year.
- Spending for this task is 76% (\$48K) over the planned budget at LLNL. The additional costs reflect the continuation of FY00 workscope into FY01. (Completion of reports for WBS 4.2, and closeout of those tasks.) We have requested that we be allowed to use our uncommitted FY00 carryover to cover these costs.

Schedule Performance

The PIPS will be transmitted to DOE with comment resolution annotations in January. Completion of this milestone has been delayed due to difficulties in obtaining comments.

Issues and Risks

The major risk to the qualification program is the delay in issuing the PIPS and the ownership definition for the IPWF.

3 *Technology Transfer*

3.1 Preparation for Design Start: Site Operations Team

Participant: WSRC

Summary of Progress

Activity associated with preparation of design start has been terminated due to budget reductions announced in December. This activity will be delayed as the design start date is rescheduled.

Cost Performance

This task is under spent by \$2,159 (43%) due to its termination.

Schedule Performance

This task will be delayed as the design start date is rescheduled.

Issues and Risk

Budget reductions will delay the start of design and associated activities.

*Appendix A1: FY00 AOP Milestones Status
Summary for December 2000*

WB#	Task	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
1.0 Program Management									
FY99 Milestones									
1.1	Project Office	b. Complete draft project management	LLNL	Jan-99		100	1/31/00		PIP 00-006 Sent to MD for review
FY00 Milestones									
1.1	Project Office	a. Provide revised integrated D&T plan	LLNL	Nov-99	Sep-00	100		Mar-00	PIP 00-0035
1.2	QA	a. Complete management assessment rpt	LLNL	Sep-00	Sep-00	100		Sep-00	PIP 00-117LTR
		b. Complete annual audit	LLNL	Sep-00	Sep-00	100		Sep-00	PIP 00-115LTR
1.3	Document Control	a. Provide DCC annual report	LLNL	Sep-00	Dec-00	100		12-Dec	PIP 00-154
2.0 Technical Support									
FY98 Milestones									
2.1	Feed Materials Definition and Characterization	b. Update the feed materials characterization report	LLNL	Feb-99		100		11/4/99	PIP 99-148
FY99 Milestones									
2.1	Feed Materials Characterization and Blending	a. Update feed materials blending strategy report	LLNL	Mar-99		100		12/8/99	PIP 99-170
		b. Complete cost-benefit analysis for sampling plan	LLNL	Sep-99		100	1/30/00	6/30/00	PIP 00-002
		c. Update the feed materials characterization report	LLNL	Sep-99		100		11/4/99	PIP 99-148
2.4	Material Transport System	a. Complete material transport system plan	WSRC	Sep-99		100	1/31/00	7/28/00	PIP 00-092LTR
FY00 Milestones									
2.1	Feed Materials Characterization and Blending	1 Revised draft of the feed materials characterization report	LLNL	May-00	10/27/00	75	Jul-00	Feb-01	Milestone will be assessment of RFETS inventory and is on hold pending L. Gray return.
2.3	Technical Integration	1 Draft Facility Design Description	LLNL	Jul-00		100	Jul-00	7/21/00	PIP 00-067LTR
		2 Draft System Design Description for Material Transport	WSRC	Jul-00	30-Sep	100		9/15/00	PIP 00-092/PIP 00-056LTR
		3 Waste Handling practices evaluation	WSRC	Mar-00		100	2/30/00	3/30/00	PIP 00-091
		4 Draft System Design Description for Waste Handling	WSRC	Apr-00	09/30/00	100	30-Sep	9/15/00	PIP 00-057LTR

WB#	Task	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
	3.0 Immobilized Form Development								
	FY99 Milestones								
3.4	Process Control Model Development								
		a. Provide interim data summary report	LLNL & ANSTO	Jul-99	06/30/00	100		7/20/00	PIP 00-094
		b. 1. Complete equilibrium phase diagram and 2. impurity studies sample	LLNL & ANSTO	Sep-99	03/15/00	100		2/16/00	PIP 00-016
	FY00 Milestones								
3.1	Basic Formulation and Process Parameters?	1 Provide formulation update for the SDD	LLNL	Dec-99	08/31/00	100		11/20/00	PIP 00-141
3.2	Form Qualification Samples and Data	1 Provide supplementary report in support of the licensing application	LLNL	Jul-00	08/31/00	100		11/20/00	PIP 00-141
3.3	Product Control Model Development	1 Provide PCM methodology for preliminary testing	LLNL	Dec-99	02/29/00	100		2/28/00	PIP 00-036

WB#	Task	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
	4.0 Performance Testing & Qualification for Repository FY99 Milestones								
4.1	Form Performance Testing & Dissolution Modeling	e. Issue data package on SPFT results for repository license application f. Issue interim report on model development for repository license application	LLNL	Jun-99		100		1/19/00	PIP 00-003
			LLNL	Jun-99		100		1/19/00	PIP 00-003
4.3	Form Qualification and Repository Interactions	b. Issue Rev0 of PIPS	WSRC	Aug-99		100		1/19/00	PIP 00-004
	FY00 Milestones								
4.1	Form Performance Testing & Dissolution Modeling	1 Document baseline characteristics of 238Pu ceramic samples 2 Update SPFT report with results from Inner-term testing of the ceramic 3 Document results of short-term testing 4 Issue final report on model development for repository PA 5 Document results of long-term testing of the ceramic 6 Issue report on status of drip tests and VHT interaction tests 7 Letter report on status of 238Pu radiation damage effects	PNNL	Apr-00	06/30/00	100	5/1/00	6/2/00	PIP 00-081
			LLNL	May-00	02/01/01	99	8/10/00		Manuscript in final review
			ANL	Jun-00	06/30/00	100	5/8/00	6/30/00	PIP 00-096
			LLNL	Jun-00	02/01/01	95			Manuscript in review
			ANL	Aug-00	09/29/00	100	8/16/00	Sep-00	PIP 00-120LTR 11/11/00
			ANL	Aug-00	08/15/00	100	7/26/00	9/15/00	PIP 00-109LTR
			PNNL	Sep-00	09/01/00	100	8/15/00	9/15/00	PIP 00-110LTR
4.2	Thermodynamic Data Determination and Validation								
		2 Issue final report on Ti solubility and speciation 3 Issue final report on Hf solubility and speciation 4 Issue report on Pu and Gd sorption on colloids	LLNL	Aug-00	10/15/00	100	10/30/00	11/22/00	PIP 00-148
			PNNL	Aug-00	08/10/00	100	8/20/00	9/15/00	PIP 00-108
			LLNL	Aug-00	10/20/00	100	10/15/00	11/30/00	PIP 00-156
4.3	Form Qualifications and Repository Interactions	1 Provide initial draft of PICP 2 Issue integrated data report for repository license application	WSRC	Sep-00	10/20/00	100	11/21/00	11/21/00	PIP 00-149
			LLNL	Aug-00	10/31/00	100	1/31/01	1/25/01	PIP 01-004

WB#	Task	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
5.0 Plutonium Conversion Process/Equipment Development FY99 Milestones									
5.4	Material Unpackaging and Sorting	d. Place orders for opening equipment	WSRC	Sep-99		100		11/22/99	PIP 99-161
5.5	Metal Fuel Feed Preparation	a. Procure mechanical systems and electronic controls	LLNL	Mar-99		100			PIP 99-168
5.6	Metal Conversion	a. Perform feasibility demonstrations on Pu-Al alloys	LLNL	Jun-99	08/15/00	90	12/15/00		Work Completed. Report is in the process of being written
		b. Procure remaining mechanical systems and electronics	LLNL	Jun-99		100		11/23/99	PIP 99-169
		d. Prepare area in Bldg 332 at LLNL	LLNL	Sep-99		100		1/1/00	PIP 99-177
5.8	Materials Characterization	a. Initiate design of prototype materials characterization system	WSRC	Jan-99		100		11/22/99	PIP 99-157
FY00 Milestones									
5.1	Material Receipt and Storage	1 Provide draft preliminary SDD for plant design	WSRC	Apr-00	07/28/00	100	3/24/00	6/27/00	PIP-00-041
5.2	Oxide Fuel Feed Preparation	1 Provide draft preliminary SDD	WSRC	Apr-00	09/30/00	100		9/19/00	PIP 00-114LTR 9/25/00
5.3	Material Size Reduction	2 Initiate test of key system components	WSRC	Jul-00		100		10/11/00	PIP 00-123LTR
		1 Evaluate industry capabilities and write report	LLNL	Dec-99	06/30/00	70	N/A	N/A	Summary of work was incorporated into SDD See PIP-00-042 LTR 8/30/00
		2 Provide draft preliminary SDD	LLNL	Apr-00	06/30/00	100			Task was never started because task was cancelled
		3 Produce oxide powder for PuCTF	LLNL	Sep-00	N/A	N/A	N/A	N/A	PIP-00-043 LTR 8/30/00
5.4	Material Unpackaging and Sorting	1 Draft preliminary SDD	WSRC	Apr-00	07/28/00	100	May-00	9/19/00	PIP 00-118LTR 10/11/2000
5.5	Metal Fuel Feed Preparation	2 Complete testing of opening equipment	WSRC	Sep-00	09/30/00	80			Work stopped and was documented in SDD. See PIP-00-021
		1 Complete integrated system prototype assembly	LLNL	Dec-99	07/28/00	95	2/11/00		
		2 Provide draft preliminary SDD	LLNL	Apr-00	07/28/00	95	2/11/00	10/3/00	
		3 Move system into Radiation Material Management Area	LLNL	Jul-00	N/A	N/A	N/A	N/A	Task was never started because task was cancelled
		4 Initiate hot tests	LLNL	Aug-00	N/A	N/A	N/A	N/A	Task was never started because task was cancelled.
5.6	Metal Conversion	1 Complete integrated system assembly	LLNL	Nov-99	08/15/00	100			PIP-00-099
		2 Provide draft preliminary SDD	LLNL	Apr-00	07/15/00	85		28-Feb	Milestone moved into FY01 AOP
		3 Move system into Radiation Material Management Area	LLNL	Jul-00	09/30/00	100		29-Dec	Milestone moved into FY01 AOP
		4 Initiate hot tests	LLNL	Aug-00	02/01/01			1-Apr	Milestone moved into FY01 AOP
5.7	Impure Oxide Feed Preparation	1 Obtain and install RIAR salt washer	LLNL	Mar-00	10/15/00	50		30-Mar	Preparing FEDR and glovebox for washer
		2 Provide draft preliminary SDD	LLNL	Apr-00	07/15/00	95			PIP-00-045 LTR 8/30/00
5.8	Materials Characterization	3 Perform feasibility demonstration	LLNL	Sep-00	30-May				Milestone moved into FY01 AOP
		1 Procure/receive instrumentation	LLNL	Jan-00	08/30/00	100			PIP-00-134
		2 Provide draft preliminary SDD	LLNL	Apr-00	07/28/00	100		Jul-00	PIP-00-090
5.9	Material Control and Accountability	3 Instrumentation installation complete	LLNL	Jun-00	06/30/01				Milestone moved into FY01 AOP
		1 Develop and evaluate equipment options	WSRC	Jan-00	06/28/00	100		Jun-00	Complete. in SDD, PIP-00-055
		2 Provide draft preliminary SDD	WSRC	Apr-00	06/28/00	100		Jun-00	Complete. in SDD, PIP-00-055

WB#	Task	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
5.10	In-process Storage Vault	1 Provide draft preliminary SDD	WSRC	Apr-00	06/28/00	100		6/29/00	PIP-00-046
		2 Provide SDD	WSRC	Sep-00	12/01/00	100			PIP-00-046
6.0	First-Stage Immobilization	Process/Equipment Development							
	FY00 Milestones								
6.1	Ceramic Feed Batching	1 Provide draft preliminary SDD	WSRC	Apr-00	07/28/00	100			PIP-00-048
		2 Approve Blender Design (formerly Complete Mockup Installation)	WSRC	Jul-00		100		11/17/00	PIP 00-142LTR
6.2	Ceramic Subsystem Development and Testing	1 Puck automated handling system fabricated	WSRC	Jan-00		100			PIP 00-026
		2 PuCTF tested with surrogate in Bldg 241	LLNL	May-00	06/30/00	100			PIP 00-087
		3 LLNL Pu facility space prepared for installation of PuCTF	LLNL	May-00	12/29/00	100			PIP 00-155
		4 Provide draft preliminary SDD defining preliminary baseline	LLNL	Apr-00	06/30/00	100			Ltr PIP-00-049
		5 CPTF design started	WSRC	Aug-00	09/30/00	100			PIP 00-121LTR
6.3	Puck NDE for Process Control	1 XRD NDE plant design specifications	WSRC	Oct-99	01/31/00	100			PIP 00-015
		2 Draft preliminary NDE SDD	LLNL	Apr-00	06/30/00	100			PIP-00-080LTR
6.4	SNM Accountability	1 Provide draft MC&A preliminary SDD	LLNL	Apr-00	06/30/00	100			PIP-00-080LTR
6.5	Recycle of Unacceptable Materials	1 Provide draft Recycle preliminary SDD	LLNL	Apr-00	06/30/00	100			PIP 00-049
6.6	Can Loading	1 Provide draft Can Loading preliminary SDD	WSRC	Apr-00	06/28/00	100		7/10/00	PIP-00-050
		2 Automated can loading and swiping demonstration complete	WSRC	Sep-00		100			PIP 00-135LTR
6.7	Can MC&A	1 Preliminary can MC&A requirements and potential analytical techniques determined	WSRC	Apr-00	09/30/00	100		6/1/00	In SDD, PIP-00-055
		2 Provide draft Can MC&A preliminary SDD	WSRC	May-00	07/28/00	100		6/1/00	In SDD, PIP-00-055
6.8	Can Storage Vault	1 Provide draft Can Storage Vault preliminary SDD	WSRC	May-00	06/28/00	100		7/11/00	Combined with CIC system. PIP-00-051
7.0	Second-Stage Immobilization	Process/Equipment Development							
	FY99 Milestones								
7.1.1	Can-in-Canister System	a. Provide magazines and racks for phase 1 cold pour tests	WSRC	Mar-99		100	10/26/99	11/16/99	PIP 99-163
		b. Complete phase I cold pour tests and provide analysis report	WSRC	Sep-99	12/15/99	100			PIP 00-018
	FY00 Milestones								
7.1.1	Can-in-Canister Design and Assembly	1 Provide magazine and racks for Phase II Cold Pour Tests	WSRC	Jan-00	09/30/00	100		9/23/00	PIP 00-105LTR
		2 Provide draft preliminary SDD	WSRC	Apr-00	07/28/00	100		7/11/00	PIP 00-051
7.1.2	Canister Pour Analysis and Testing	1 Complete Phase II Cold Pour Tests	WSRC	Apr-00	08/31/00	100		9/7/00	PIP 00-105LTR
		2 Complete Phase I ProCast Model Report	LLNL	Jun-00	10/15/00	100		11/29/00	PIP 00-145LTR
		3 Complete Phase II Cold Pour Test Report	WSRC	Jul-00	12/31/00	100		12/5/00	PIP 00-147:TR
7.2	Canister Transport System	1 Provide draft preliminary SDD	WSRC	Apr-00	09/30/00	100		9/15/00	PIP 00-052LTR
7.3	DWPF Receipt and Handling	1 Provide draft preliminary SDD	WSRC	Apr-00	09/30/00	100		9/15/00	PIP 00-053LTR

[illegible]

*Appendix A2: FY01 AOP Milestones Status
Summary for December 2000*

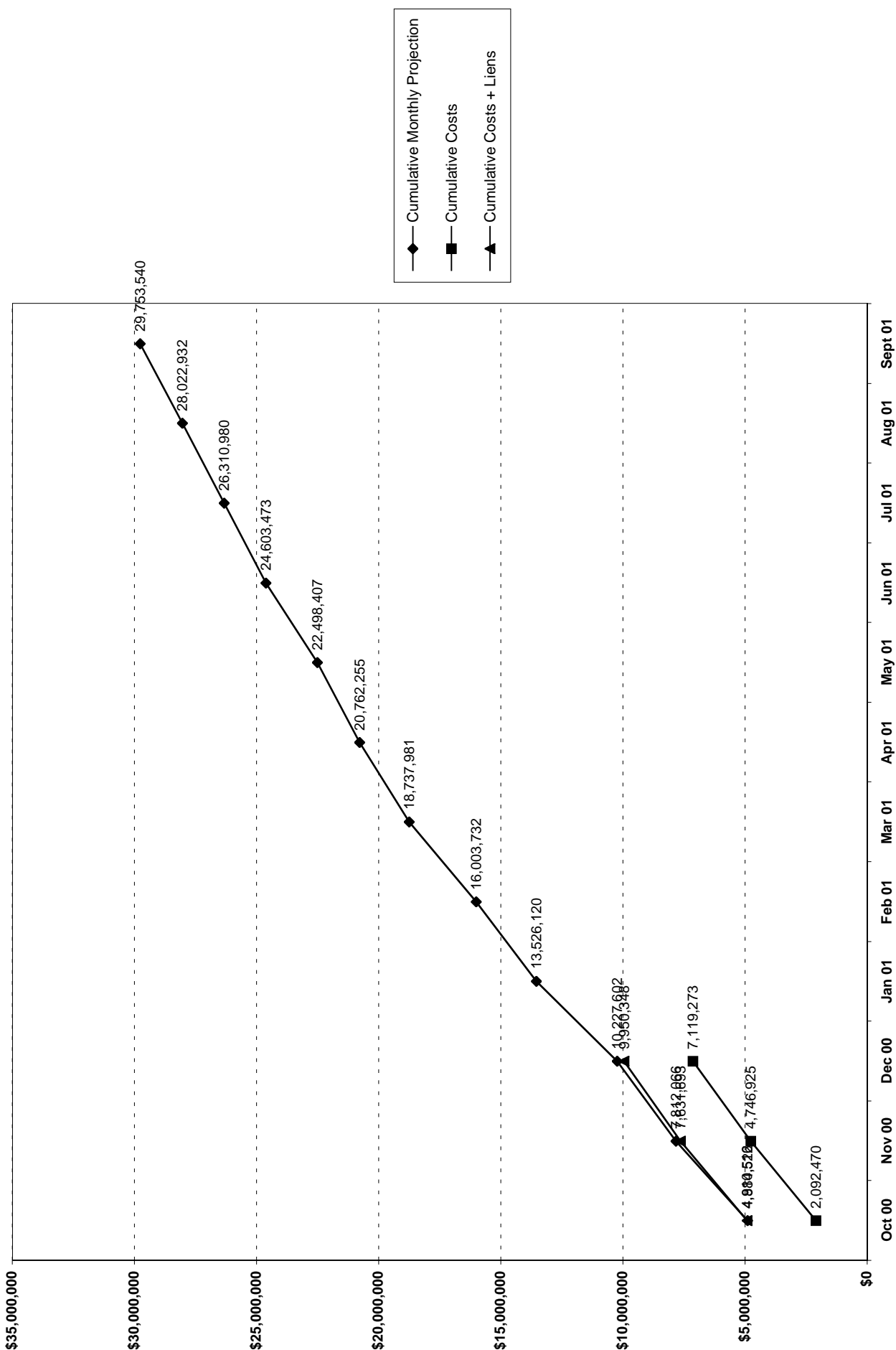
WBS	Task	DOE/MD Milestone #	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
1 Pre-Design Phase Activities										
1.2	Design-Only Conceptual Design Report	5.1.2/FY01/a	Issue DOCR, Rev. 3	LLNL	Nov-00	Feb-01	99	Oct-00		Awaiting DOE sign-off.
2.1 Program Management										
2.1.1	Project Office	2.1.1/FY01/a 2.1.1/FY01/b	Update D&T Plan Update PMP FY01	LLNL LLNL	Jun-01 Sep-01					
2.1.2	Quality Assurance	2.1.2/FY01/a 2.1.2/FY01/b 2.1.2/FY01/c	D&T QA program qualified TPO completes Management Assessment Report TPO completes annual audit	LLNL LLNL LLNL	Nov-00 Sep-01 Sep-01	Dec-00 Sep-01 Sep-01	100 0 25		8-Dec	PIP-00-153LTR Scheduled for Aug-01
2.1.3	Document Control	2.1.3/FY01/a	Provide DCC Annual Operations Report	LLNL	Sep-01	Sep-01				
2.2 D&T Plan for Design										
2.2.1	Technical Support and Integration									
2.2.1.1	Feed Materials Characterization and Blending	2.2.1.1/FY01/a	Update the feed materials characterization report	WSRC	Sep-01	Sep-01	20			
2.2.1.2	Proliferation Resistance	2.2.1.2/FY01/a	Report results from CIC review proliferation resistance assessment	LLNL	Sep-01					
2.2.1.3	System Integration and Cross-cutting Functions	2.2.1.3/FY01/a	Provide draft SDDs to DOE	LLNL	Dec-00	Feb-01	95			The draft SDDs are in final edit and review. Edit and review, especially for consistency with the other SDDs, require more effort than anticipated in August when the schedule was established. The SDD, due on Dec 15, 2001, will be issued in Feb 2001.
2.2.1.4	Material Transport System	2.2.1.4/FY01/a 2.2.1.4/FY01/b	Provide FDD to DOE Provide integration SDDs to DOE	LLNL LLNL	Jun-01 Jun-01					
2.2.1.5	Waste Handling System	2.2.1.5/FY01/a 2.2.1.5/FY01/b	Provide draft (Material Transport) SDD Provide (Material Transport) SDD	WSRC WSRC	Dec-00 Jun-01	Jan-01 Jun-01	99 0			Draft completed.
2.2.2	Immobilized Form Development									
2.2.2.1	Process Control Model Development	2.2.2.1/FY01/a	Complete Waste Generation Report Provide (Waste Handling) SDD	WSRC WSRC	Dec-00 Jun-01	Feb-01 Jun-01	50 0			Delayed to complete 13MT SDD
2.2.2.2	Process Control Model Development	2.2.2.2/FY01/a	Provide preliminary PCM and summary of testing	LLNL	Mar-01	Mar-01	55			
2.2.2.3	Plutonium Conversion Process and Equipment Development									
2.2.2.3.1	Material Receipt and Storage	2.2.2.3.1/FY01/a 2.2.2.3.1/FY01/b	Provide draft SDD Provide SDD	WSRC WSRC	Dec-00 Jun-01	Jan-01 Jun-01	99 0			Draft completed.
2.2.2.3.2	Material Size Reduction	2.2.2.3.2/FY01/a 2.2.2.3.2/FY01/b 2.2.2.3.2/FY01/c	Provide draft SDD Provide SDD Produce oxide powder for PuCTF	LLNL LLNL LLNL	Dec-00 Jun-01 Sep-01	Feb-01	50			WSRC developing SDD. Limited resources will delay.

WBS	Task	DOE/MD Milestone #	Milestones	Resp. Site	Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
2.2.3.4	Material Unpackaging and Sorting	2.2.3.4/FY01/a 2.2.3.4/FY01/b 2.2.3.4/FY01/c	Provide draft SDD Complete concept for material transfer Provide SDD	WSRC WSRC WSRC	Dec-00 Mar-01 Jun-01	Jan-01 Sep-01 Mar-01	95 0 0			Draft completed. Delayed due to budget cut. Postponed due to budget cut.
2.2.3.6	Metal Conversion	2.2.3.6/FY01/a 2.2.3.6/FY01/b 2.2.3.6/FY01/c 2.2.3.6/FY01/d 2.2.3.6/FY01/e	Move system into RMMA Provide draft SDD Initiate hot tests Complete initial hot tests Provide SDD	LLNL LLNL LLNL LLNL LLNL	Oct-00 Dec-00 Jun-01 Jul-01 Jun-01	12/30/00 28-Feb 14-Jun 7/31/01	100 85		29-Dec	PIP-00-152 Preliminary draft in preparation Hardware is in Pu building. Cold activation is underway
2.2.3.7	Impure Oxide Feed Preparation	2.2.3.7/FY01/a	Provide draft SDD	LLNL	Dec-00	Feb-01	80			WSRC developing SDD. Limited resources will delay.
		2.2.3.7/FY01/b	Perform feasibility demonstration	LLNL	Feb-01	30-May				Material received from Hanford. Awaiting installation of washer in Pu building.
		2.2.3.7/FY01/c	Provide SDD	LLNL	Jun-01					
2.2.3.8	Materials Characterization	2.2.3.8/FY01/a	Complete installation of equipment	LLNL & WSRC	Dec-00	06/30/01				Lost several months because of difficulties obtaining facility approvals, labor, and ISM issues with outside vendors.
		2.2.3.8/FY01/b	Provide Input to Analytical SDD	LLNL	Apr-01					
2.2.3.9	Material Control and Accountability	2.2.3.9/FY01/a	Provide input to MC&A SDD	WSRC	Apr-01	Apr-01	0			
2.2.3.10	In-process Storage Vault	2.2.3.10/FY01/a 2.2.3.10/FY01/b	Provide draft SDD Provide SDD	WSRC WSRC	Dec-00 Jun-01	Jan-01 Jun-01	99 0			Draft completed.
2.2.4	First-Stage Immobilization	Process and Equipment Development								
2.2.4.1	Ceramic Feed Blending and Batching	2.2.4.1/FY01/a 2.2.4.1/FY01/b 2.2.4.1/FY01/c	Provide draft blending SDD Complete blender test at vendor Provide blending SDD	WSRC WSRC WSRC	Dec-00 Mar-01 Jun-01	Jan-01 Mar-02 Mar-02	95 10 0			Draft completed. Postponed due to budget cut. Postponed due to budget cut.
2.2.4.2.1	Ceramic Process Development	2.2.4.2.1/FY01/a 2.2.4.2.1/FY01/b	Provide draft SDD for ceramification system Provide SDD, Rev. 0	LLNL LLNL	Dec-00 Jul-01	28-Feb-01	80			In progress. Deferred to FY 02.
2.2.4.2.2	Plutonium Ceramic Test Facility (PuCTF)	2.2.4.2.2/FY01/a 2.2.4.2.2/FY01/b 2.2.4.2.2/FY01/c 2.2.4.2.2/FY01/d	PuCTF installation complete in LLNL Pu facility PuCTF operational with plutonium PuCTF operation validated with plutonium	LLNL LLNL LLNL	Feb-01 Jun-01 Sep-01	28-Feb-01 22-Aug-01 2-Oct-01	50 0 0			Installation started. Dependent on installation completion and ORR approval by LLNL and/or DOE
2.2.4.2.3	Ceramification Prototype Test Facility (CPTF)	2.2.4.2.3/FY01/a 2.2.4.2.3/FY01/b 2.2.4.2.3/FY01/c	CPTF design completed Provide input for Ceramification SDD Large furnace, press and mill installed and tested	WSRC WSRC WSRC	Dec-00 Apr-01 Jun-01	01/15/00 04/30/02 6/30/01	99% 20% 40%			Report completed and sent to TPO for formal issue to DOE-MD. Postponed due to budget cut Furnace installed and testing underway. Press and mill ordered.
2.2.4.3	Puck NDE/MC&A for Process Control and SNM Accountability	2.2.4.3/FY01/a 2.2.4.3/FY01/b	WSRC NDE XRD plant prototype test system installed PuCTF NDE System installed in LLNL Pu facility	WSRC LLNL	Jan-01 Mar-01	01/31/01	80 30			XRD unit received and moved into laboratory in SRTC. May be problem with instrument alignment that will delay operation. Deferred to FY02.

WBS	T a s k	DOE/MD Milestone #	M i l e s t o n e s	Resp. Site		Due D a t e	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
3.1	Preparation for Design Start: Site/Operation Team	3.1.4.1/FY01/a	Issue Technology Review Board Report	WSRC		Jun-01					
		3.1.4.2/FY01/a	Issue Conceptual Design Review Board Report	WSRC		Jun-01					

Appendix B: December FY01 Cost Summary Report

FMDP - FY01 IMMOBILIZATION



IMMOBILIZATION FY01 SPEND PLAN

1/23/01

Immobilization FY01 Spend Plan

5.1.2

DOCDR Total	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI WSRC - AI Dislution														
Manpower Projection	15,000	15,000	0	0	0	0	0	0	0	0	0	0	30,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	271,970	0	0	0	0	0	0	0	0	0	0	0	271,970	0
Total Monthly Projection	286,970	15,000	0	0	0	0	0	0	0	0	0	0	301,970	0
Cumulative Monthly Projection	286,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	3,019,700	0
Cumulative Costs	109,315	150,110	240,181											20%
Cumulative Costs + Liens	285,711	246,732	339,997											-13%

30,000 New FY01 Funds
271,970 Comm. C/O
0 Uncommitted C/O
301,970 Total FY01 Funding

5.2.1.1

Technical Project Office	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI WSRC - ANL PNNL														
Manpower Projection	91,203	310,732	134,371	148,156	147,371	178,956	158,094	158,456	163,094	183,232	102,732	181,303	2,018,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	116,572	0	0	0	0	0	0	0	0	0	0	0	116,572	0
Total Monthly Projection	207,775	310,732	134,371	148,156	147,371	178,956	158,094	158,456	163,094	183,232	102,732	181,303	2,134,572	0
Cumulative Monthly Projection	207,775	518,507	652,878	801,334	948,705	1,127,661	1,285,755	1,444,211	1,607,305	1,790,537	1,952,269	2,134,572		48%
Cumulative Costs	89,019	223,915	338,282											7%
Cumulative Costs + Liens	205,391	495,169	609,572											7%

2,018,000 New FY01 Funds
116,572 Comm. C/O
0 Uncommitted C/O
2,134,572 Total FY01 Funding

5.2.1.2

QA	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI WSRC - ANL PNNL														
Manpower Projection	504,109	43,094	40,204	51,049	58,823	62,242	57,835	55,642	52,235	56,200	58,287	60,280	1,100,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	78,529	0	0	0	0	0	0	0	0	0	0	0	78,529	0
Total Monthly Projection	582,638	43,094	40,204	51,049	58,823	62,242	57,835	55,642	52,235	56,200	58,287	60,280	1,178,529	0
Cumulative Monthly Projection	582,638	625,732	665,936	716,985	775,808	838,050	895,885	951,527	1,003,762	1,059,962	1,118,249	1,178,529		61%
Cumulative Costs	112,909	187,178	258,834											-6%
Cumulative Costs + Liens	624,545	670,459	707,049											-6%

1,100,000 New FY01 Funds
78,529 Comm. C/O
0 Uncommitted C/O
1,178,529 Total FY01 Funding

5.2.1.3

Technical Documentation	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI WSRC														
Manpower Projection	12,380	30,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	25,620	320,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	164,500	0	0	0	0	0	0	0	0	0	0	0	164,500	0
Total Monthly Projection	176,880	30,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	25,620	484,500	0
Cumulative Monthly Projection	176,880	206,880	234,880	262,880	290,880	318,880	346,880	374,880	402,880	430,880	458,880	484,500		79%
Cumulative Costs	11,981	44,945	49,605											16%
Cumulative Costs + Liens	176,174	190,086	197,343											16%

320,000 New FY01 Funds
164,500 Comm. C/O
0 Uncommitted C/O
484,500 Total FY01 Funding

5.2.1.4

Plutonium Facility	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI														
Manpower Projection	0	516,666	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	3,100,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	516,666	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	3,100,000	0
Cumulative Monthly Projection	0	516,666	775,000	1,033,333	1,291,666	1,550,000	1,808,333	2,066,666	2,325,000	2,583,333	2,841,666	3,100,000		36%
Cumulative Costs	0	527,625	498,851											36%
Cumulative Costs + Liens	0	527,625	498,851											36%

3,100,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
3,100,000 Total FY01 Funding

5.2.1

D&T Program Management	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Lead - Tom Gould														
Manpower Projection	607,692	900,492	460,908	485,838	492,527	527,531	502,262	500,431	501,662	525,765	507,332	525,536	6,538,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	339,601	0	0	0	0	0	0	0	0	0	0	0	339,601	0
Total Monthly Projection	967,293	900,492	460,908	485,838	492,527	527,531	502,262	500,431	501,662	525,765	507,332	525,536	6,897,601	0
Cumulative Monthly Projection	967,293	1,867,785	2,328,694	2,814,532	3,307,059	3,834,591	4,336,853	4,837,284	5,338,947	5,864,712	6,372,064	6,897,601		51%
Cumulative Costs	213,789	983,663	1,145,591											14%
Cumulative Costs + Liens	1,006,310	1,883,340	2,012,815											14%

6,538,000 New FY01 Funds
339,601 Comm. C/O
0 Uncommitted C/O
6,897,601 Total FY01 Funding

Feed Materials Characterization and

Blending	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI WSRC														
Manpower Projection	37,620	30,000	30,380	15,000	18,000	20,000	22,300	22,300	22,300	22,300	22,300	22,500	285,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	1,045	0	0	0	0	0	0	0	0	0	0	0	1,045	0
Total Monthly Projection	38,665	30,000	30,380	15,000	18,000	20,000	22,300	22,300	22,300	22,300	22,300	22,500	286,045	0
Cumulative Monthly Projection	38,665	68,665	99,045	114,045	132,045	152,045	174,345	196,645	218,945	241,245	263,545	286,045		-2%
Cumulative Costs	37,240	83,280	101,238											-3%
Cumulative Costs + Liens	38,285	84,325	102,283											-3%

285,000 New FY01 Funds
1,045 Comm. C/O
0 Uncommitted C/O
286,045 Total FY01 Funding

IMMOBILIZATION FY01 SPEND PLAN

1/23/01

5.2.2.1.2

Proliferation Resistance		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL WSRC															
Manpower Projection		0	0	10,000	20,000	10,000	10,000	5,000	5,000	5,000	5,000	5,000	5,000	80,000	0
Major Procurement Projection		0	0	0	120,000	0	0	0	0	0	0	0	0	120,000	0
FY00 Liens		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection		0	0	10,000	140,000	10,000	10,000	5,000	5,000	5,000	5,000	5,000	5,000	200,000	0
Cumulative Monthly Projection		0	0	10,000	130,000	160,000	170,000	175,000	180,000	185,000	190,000	195,000	200,000		100%
Cumulative Costs		0	0	0	0										100%
Cumulative Costs + Liens		0	0	0	0										100%

200,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
200,000 Total FY01 Funding

5.2.2.1.3

System Integration and Cross-outting Functions		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL WSRC															
Manpower Projection		132,891	129,609	118,500	93,500	103,500	112,000	65,000	35,000	35,000	35,000	25,000	25,000	910,000	0
Major Procurement Projection		0	0	0	100,000	0	0	0	0	0	0	0	0	100,000	0
FY00 Liens		2,861	0	0	0	0	0	0	0	0	0	0	0	2,861	0
Total Monthly Projection		132,891	129,609	118,500	193,500	103,500	112,000	65,000	35,000	35,000	35,000	25,000	25,000	1,010,000	0
Cumulative Monthly Projection		132,891	262,500	381,000	574,500	678,000	790,000	855,000	890,000	925,000	960,000	985,000	1,010,000		11%
Cumulative Costs		133,632	242,079	339,907											10%
Cumulative Costs + Liens		136,493	244,940	343,648											10%

1,010,000 New FY01 Funds
2,861 Comm. C/O
0 Uncommitted C/O
1,012,861 Total FY01 Funding

5.2.2.1.4

Material Transport		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC															
Manpower Projection		0	3,000	3,000	3,000	5,000	5,000	5,000	10,000	10,000	8,000	4,000	4,000	60,000	0
Major Procurement Projection		0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection		0	3,000	3,000	3,000	5,000	5,000	5,000	10,000	10,000	8,000	4,000	4,000	60,000	0
Cumulative Monthly Projection		0	3,000	6,000	9,000	14,000	19,000	24,000	34,000	44,000	52,000	56,000	60,000		-1%
Cumulative Costs		0	1,597	6,077											-1%
Cumulative Costs + Liens		0	1,597	6,077											-1%

60,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
60,000 Total FY01 Funding

5.2.2.1.5

Waste Handling System		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC															
Manpower Projection		5,500	4,500	4,000	6,000	12,000	12,000	16,000	10,000	10,000	10,000	10,000	10,000	110,000	0
Major Procurement Projection		0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection		5,500	4,500	4,000	6,000	12,000	12,000	16,000	10,000	10,000	10,000	10,000	10,000	110,000	0
Cumulative Monthly Projection		5,500	10,000	14,000	20,000	32,000	44,000	60,000	70,000	80,000	90,000	100,000	110,000		24%
Cumulative Costs		5,399	6,134	10,636											24%
Cumulative Costs + Liens		5,399	6,134	10,636											24%

110,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
110,000 Total FY01 Funding

5.2.2.1

Technical Support & Integration		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Lead - A/D/Disabaho															
Manpower Projection		176,011	167,109	165,890	137,500	148,500	159,000	113,300	82,300	82,300	80,300	66,300	66,500	1,445,000	0
Major Procurement Projection		0	0	0	220,000	0	0	0	0	0	0	0	0	220,000	0
FY00 Liens		3,906	0	0	0	0	0	0	0	0	0	0	0	3,906	0
Total Monthly Projection		179,917	167,109	165,890	357,500	148,500	159,000	113,300	82,300	82,300	80,300	66,300	66,500	1,668,906	0
Cumulative Monthly Projection		179,917	347,026	512,906	870,406	1,018,906	1,177,906	1,291,206	1,373,506	1,455,806	1,536,106	1,602,406	1,668,906		11%
Cumulative Costs		176,271	333,090	457,918											10%
Cumulative Costs + Liens		180,177	336,996	462,643											10%

1,665,000 New FY01 Funds
3,906 Comm. C/O
0 Uncommitted C/O
1,668,906 Total FY01 Funding

5.2.2.2.3

Development		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL WSRC															
Manpower Projection		113,700	97,100	70,300	70,300	77,100	71,800	10,300	16,200	13,700	11,000	16,200	16,300	584,000	0
Major Procurement Projection		0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens		91,708	0	0	0	0	0	0	0	0	0	0	0	91,708	0
Total Monthly Projection		205,408	97,100	70,300	70,300	77,100	71,800	10,300	16,200	13,700	11,000	16,200	16,300	675,708	0
Cumulative Monthly Projection		205,408	302,508	372,808	443,108	520,208	592,008	602,308	615,508	632,208	643,208	659,408	675,708		17%
Cumulative Costs		100,636	175,487	309,944											4%
Cumulative Costs + Liens		203,343	275,859	339,652											4%

584,000 New FY01 Funds
91,708 Comm. C/O
0 Uncommitted C/O
675,708 Total FY01 Funding

5.2.2.2

Immoblized Form Development		Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Lead - Guy Armantrout															
Manpower Projection		113,700	97,100	70,300	70,300	77,100	71,800	10,300	16,200	13,700	11,000	16,200	16,300	584,000	0
Major Procurement Projection		0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens		91,708	0	0	0	0	0	0	0	0	0	0	0	91,708	0
Total Monthly Projection		205,408	97,100	70,300	70,300	77,100	71,800	10,300	16,200	13,700	11,000	16,200	16,300	675,708	0
Cumulative Monthly Projection		205,408	197,736	268,036	338,336	414,436	487,236	497,536	513,736	527,436	538,436	554,636	570,936		-16%
Cumulative Costs		100,636	175,487	309,944											-34%
Cumulative Costs + Liens		100,636	175,487	359,652											-34%

584,000 New FY01 Funds
91,708 Comm. C/O
0 Uncommitted C/O
675,708 Total FY01 Funding

IMMOBILIZATION FY01 SPEND PLAN

1/23/01

5.2.2.3.1

Material Receipt and Storage														Cum. Var.	
WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	55,000	0	55,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	55,000	0	55,000	0
Cumulative Monthly Projection	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000	-1%		-1%
Cumulative Costs	0	2,701	10,066										-1%		-1%
Cumulative Costs + Liens	0	2,701	10,066												

55,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
55,000 Total FY01 Funding

5.2.2.3.3

Material Size Reduction														Cum. Var.	
LNL WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	0	0	7,500	7,500	7,500	0	0	0	0	0	0	30,000	0	30,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	7,500	7,500	7,500	0	0	0	0	0	0	30,000	0	30,000	0
Cumulative Monthly Projection	0	0	7,500	15,000	22,500	30,000	30,000	30,000	30,000	30,000	30,000	30,000	130%		130%
Cumulative Costs	-2,270	-2,270	-2,270												
Cumulative Costs + Liens	-2,270	-2,270	-2,270												

30,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
30,000 Total FY01 Funding

5.2.2.3.4

Material Unpacking and Sorting														Cum. Var.	
LNL WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	10,000	7,600	9,600	14,600	15,600	16,000	9,600	7,600	9,600	9,600	7,600	125,000	0	125,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	10,000	7,600	9,600	14,600	15,600	16,000	9,600	7,600	9,600	9,600	7,600	125,000	0	125,000	0
Cumulative Monthly Projection	10,000	17,600	27,200	41,800	57,400	73,400	83,000	90,600	100,200	107,800	125,000	125,000	15%		15%
Cumulative Costs	9,830	16,245	23,034												
Cumulative Costs + Liens	9,830	16,245	23,034												

125,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
125,000 Total FY01 Funding

5.2.2.3.6

Metal Conversion														Cum. Var.	
LNL WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	100,000	240,000	160,000	430,000	220,000	210,000	131,000	0	0	0	0	1,591,000	0	1,591,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	18,204	0	0	0	0	0	0	0	0	0	0	18,204	0	18,204	0
Total Monthly Projection	178,204	240,000	160,000	430,000	220,000	210,000	131,000	0	0	0	0	1,609,204	0	1,609,204	0
Cumulative Monthly Projection	178,204	418,204	578,204	1,028,204	1,248,204	1,458,204	1,609,204	1,609,204	1,609,204	1,609,204	1,609,204	1,609,204	-38%		-92%
Cumulative Costs	137,187	461,164	800,732												
Cumulative Costs + Liens	168,972	491,739	1,109,298												

1,591,000 New FY01 Funds
18,204 Comm. C/O
0 Uncommitted C/O
1,609,204 Total FY01 Funding

5.2.2.3.7

Impure Oxide Feed Preparation														Cum. Var.	
LNL WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	25,000	45,000	45,000	85,000	35,000	50,000	20,000	30,000	20,000	20,000	15,000	420,000	0	420,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	25,000	45,000	45,000	85,000	35,000	50,000	20,000	30,000	20,000	20,000	15,000	420,000	0	420,000	0
Cumulative Monthly Projection	25,000	70,000	115,000	200,000	235,000	285,000	305,000	335,000	385,000	405,000	420,000	420,000	3%		3%
Cumulative Costs	24,078	49,606	111,596												
Cumulative Costs + Liens	24,078	49,606	111,596												

420,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
420,000 Total FY01 Funding

5.2.2.3.8

Materials Characterization														Cum. Var.	
LNL WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	51,200	71,100	67,100	62,100	60,100	47,100	40,800	46,100	41,700	45,000	63,500	640,000	0	640,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	20,905	0	0	0	0	0	0	0	0	0	0	20,905	0	20,905	0
Total Monthly Projection	72,105	71,100	67,100	62,100	60,100	47,100	40,800	46,100	41,700	45,000	63,500	660,905	0	660,905	0
Cumulative Monthly Projection	72,105	143,205	210,305	272,405	332,505	379,605	420,405	466,505	510,705	552,405	600,905	600,905	-8%		-9%
Cumulative Costs	50,500	133,018	227,582												
Cumulative Costs + Liens	72,605	153,923	228,316												

640,000 New FY01 Funds
20,905 Comm. C/O
0 Uncommitted C/O
660,905 Total FY01 Funding

5.2.2.3.9

Material Control and Accountability														Cum. Var.	
WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	22,000	0	22,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	22,000	0	22,000	0
Cumulative Monthly Projection	0	0	0	5,000	10,000	16,000	22,000	22,000	22,000	22,000	22,000	22,000	#DIV/0!		#DIV/0!
Cumulative Costs	0	0	0												
Cumulative Costs + Liens	0	0	0												

22,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
22,000 Total FY01 Funding

5.2.2.3.10

In-Process Storage Vault														Cum. Var.	
WSRC															
Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals			
Manpower Projection	0	0	0	5,000	5,000	5,000	5,000	0	0	0	0	20,000	0	20,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	5,000	5,000	5,000	5,000	0	0	0	0	20,000	0	20,000	0
Cumulative Monthly Projection	0	0	0	5,000	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	#DIV/0!		#DIV/0!
Cumulative Costs	0	0	0												
Cumulative Costs + Liens	0	0	0												

20,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
20,000 Total FY01 Funding

IMMOBILIZATION FY01 SPEND PLAN

1/23/01

5.2.2.3

Plutonium Conversion Total														Otd 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Lead - Mark Bronson														246,200	388,700	294,200	634,300	353,200	346,600	237,400	88,700	88,800	74,300	70,600	91,100	2,905,000	0
Major Procurement Projection														0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens														39,109	0	0	0	0	0	0	0	0	0	0	0	39,109	0
Total Monthly Projection														285,509	388,700	294,200	634,300	353,200	346,600	237,400	88,700	88,800	74,300	70,600	91,100	2,942,109	0
Cumulative Monthly Projection														285,309	634,009	948,209	1,582,409	1,935,609	2,282,209	2,519,609	2,608,309	2,697,109	2,771,409	2,851,009	2,942,109		-23%
Cumulative Costs														219,326	600,464	1,170,740											-56%
Cumulative Costs + Liens														272,615	711,944	1,480,041											

2,903,000 New FY01 Funds
39,109 Comm. C/O
0 Uncommitted C/O
2,942,109 Total FY01 Funding

5.2.2.4.1

Ceramic Feed Batching														Otd 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC - Lead - Kent Sullivan														13,400	39,200	39,700	32,200	42,200	58,100	47,300	45,200	41,700	33,900	41,800	35,300	470,000	0
Major Procurement Projection														0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens														0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection														13,400	39,200	39,700	32,200	42,200	58,100	47,300	45,200	41,700	33,900	41,800	35,300	470,000	0
Cumulative Monthly Projection														13,400	52,600	92,300	124,500	166,700	224,800	272,100	317,300	359,000	392,900	434,700	470,000		48%
Cumulative Costs														12,797	29,551	47,574											48%
Cumulative Costs + Liens														12,797	29,551	47,574											

470,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
470,000 Total FY01 Funding

5.2.2.4.2.1

Ceramification Process Development														Otd 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LLNL WSRC														3,500	3,500	3,500	3,500	25,000	30,000	53,000	55,000	55,000	60,000	55,000	55,000	402,000	0
Major Procurement Projection														0	0	0	0	5,000	5,000	4,000	4,000	4,000	4,000	4,000	4,000	35,000	0
FY00 Liens														60,073	0	0	0	0	0	0	0	0	0	0	0	60,073	0
Total Monthly Projection														63,573	3,500	3,500	3,500	30,000	35,000	58,000	59,000	59,000	64,000	59,000	59,000	497,073	0
Cumulative Monthly Projection														63,573	67,073	70,573	74,073	104,073	139,073	197,073	256,073	315,073	379,073	438,073	497,073		-51%
Cumulative Costs														3,418	12,292	106,838											-51%
Cumulative Costs + Liens														63,492	72,365	106,911											

437,000 New FY01 Funds
60,073 Comm. C/O
0 Uncommitted C/O
497,073 Total FY01 Funding

5.2.2.4.2.3

Ceramification Prototype Test Facility (CPTF)														Otd 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC, Clincon														304,374	322,314	400,400	678,000	297,100	470,800	302,800	338,300	761,300	429,400	439,700	395,000	5,139,488	0
Major Procurement Projection														0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens														1,127,300	322,314	400,400	678,000	297,100	470,800	302,800	338,300	761,300	429,400	439,700	395,000	1,127,300	0
Total Monthly Projection														1,431,674	1,753,388	2,154,388	2,832,388	3,129,488	3,600,288	3,903,688	4,241,388	5,002,688	5,432,088	5,871,788	6,266,788	6,266,788	0
Cumulative Monthly Projection														1,431,674	1,753,388	2,154,388	2,832,388	3,129,488	3,600,288	3,903,688	4,241,388	5,002,688	5,432,088	5,871,788	6,266,788		65%
Cumulative Costs														276,359	534,885	764,212											14%
Cumulative Costs + Liens														1,403,659	1,651,432	1,863,302											

5,115,000 New FY01 Funds
1,127,300 Comm. C/O
24,488 Uncommitted C/O
6,266,788 Total FY01 Funding

5.2.2.4.2.2

Plutonium Ceramic Test Facility (PucTF)														Otd 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LLNL WSRC														610,000	637,000	587,000	637,000	537,000	437,000	127,000	42,000	42,000	42,000	42,000	85,000	3,825,000	0
Major Procurement Projection														30,000	30,000	30,000	20,000	0	0	0	0	0	0	0	0	110,000	0
FY00 Liens														140,678	0	0	0	0	0	0	0	0	0	0	0	140,678	0
Total Monthly Projection														780,678	667,000	617,000	657,000	537,000	437,000	127,000	42,000	42,000	42,000	42,000	85,000	4,075,678	0
Cumulative Monthly Projection														780,678	1,447,678	2,064,678	2,721,678	3,258,678	3,695,678	3,822,678	3,864,678	3,906,678	3,948,678	3,990,678	4,075,678		11%
Cumulative Costs														609,413	1,182,405	1,841,241											6%
Cumulative Costs + Liens														780,332	1,392,052	1,933,714											

3,935,000 New FY01 Funds
140,677 Comm. C/O
0 Uncommitted C/O
4,075,677 Total FY01 Funding

5.2.2.4.3

Puck NDE/MC&A for Process Control and SSN Accountability														Otd 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.	
LLNL WSRC														5,500	25,100	48,900	41,200	111,900	133,300	179,800	197,500	180,400	143,000	135,900	124,500	1,347,000	0	
Manpower Projection														0	0	0	0	0	0	0	0	0	0	0	0	26,000	0	
Major Procurement Projection														245,700	0	0	0	0	0	0	10,000	10,000	6,000	0	0	0	245,700	0
FY00 Liens														251,200	25,100	48,900	41,200	111,900	133,300	189,800	207,500	186,400	143,000	135,900	124,500	1,618,700	0	
Total Monthly Projection														251,200	276,300	325,200	366,400	478,300	631,600	821,400	1,028,900	1,215,300	1,358,300	1,484,200	1,618,700	1,618,700	0	
Cumulative Monthly Projection														251,200	276,300	325,200	366,400	478,300	631,600	821,400	1,028,900	1,215,300	1,358,300	1,484,200	1,618,700	1,618,700	0	
Cumulative Costs														5,359	22,836	40,919	22,836	40,919	22,836	40,919	22,836	40,919	22,836	40,919	22,836	40,919	22,836	87%
Cumulative Costs + Liens														251,659	298,336	286,619	251,659	298,336	286,619	251,659	298,336	286,619	251,659	298,336	286,619	251,659	12%	

IMMOBILIZATION FY01 SPEND PLAN

5.2.2.4.5

Can Loading	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC														
Manpower Projection	40,800	27,900	34,400	27,900	28,900	36,500	29,900	28,900	34,400	28,900	35,500	28,000	382,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	40,800	27,900	34,400	27,900	28,900	36,500	29,900	28,900	34,400	28,900	35,500	28,000	382,000	0
Cumulative Monthly Projection	40,800	68,700	103,100	131,000	159,900	196,400	226,300	255,200	289,600	318,500	354,000	382,000		5%
Cumulative Costs	41,141	75,622	97,617											5%
Cumulative Costs + Liens	41,141	75,622	97,617											5%

382,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
382,000 Total FY01 Funding

5.2.2.4.6

Can MC&A	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC														
Manpower Projection	4,000	7,300	8,200	7,300	12,300	14,100	11,800	11,300	9,100	7,300	9,000	7,300	105,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	4,000	7,300	8,200	7,300	12,300	14,100	11,800	11,300	9,100	7,300	9,000	7,300	105,000	0
Cumulative Monthly Projection	4,000	11,300	19,500	26,800	39,100	53,200	65,000	76,300	85,400	92,700	101,700	105,000		68%
Cumulative Costs	3,953	6,307	7,304											68%
Cumulative Costs + Liens	3,953	6,307	7,304											68%

109,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
109,000 Total FY01 Funding

5.2.2.4

First Stage Immobilization Total	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Lead - Civ Armantroit														
Manpower Projection	981,574	1,062,314	1,122,100	1,427,100	1,054,400	1,204,800	761,600	730,200	1,123,900	744,500	758,900	730,100	11,701,488	0
Major Procurement Projection	30,000	30,000	30,000	20,000	5,000	5,000	15,000	14,000	10,000	4,000	4,000	4,000	171,000	0
FY00 Liens	1,573,751	0	0	0	0	0	0	0	0	0	0	0	1,573,751	0
Total Monthly Projection	2,585,325	1,092,314	1,152,100	1,447,100	1,059,400	1,209,800	776,600	744,200	1,133,900	748,500	762,900	734,100	13,446,239	0
Cumulative Monthly Projection	2,585,325	3,677,639	4,829,739	6,276,839	7,336,239	8,546,039	9,322,639	10,066,839	11,200,739	11,949,239	12,712,139	13,446,239		40%
Cumulative Costs	952,456	1,863,963	2,905,769											10%
Cumulative Costs + Liens	2,556,467	3,495,930	4,343,106											10%

11,848,000 New FY01 Funds
1,573,750 Comm. C/O
24,488 Uncommitted C/O
13,446,238 Total FY01 Funding

5.2.2.5.1.1

Can in Canister Design and Assembly	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC														
Manpower Projection	26,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	14,000	200,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	26,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	14,000	200,000	0
Cumulative Monthly Projection	26,000	42,000	58,000	74,000	90,000	106,000	122,000	138,000	154,000	170,000	186,000	200,000		-1%
Cumulative Costs	26,482	42,803	58,784											-8%
Cumulative Costs + Liens	26,482	48,152	62,782											-8%

200,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
200,000 Total FY01 Funding

5.2.2.5.1.2

Canister Four Analysis and Testing	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLI WSRC, PNHL														
Manpower Projection	26,800	26,800	31,400	19,900	12,400	12,400	9,000	5,300	3,000	3,000	0	0	136,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	43,779	0	0	0	0	0	0	0	0	0	0	0	43,779	0
Total Monthly Projection	70,579	26,800	31,400	19,900	12,400	12,400	9,000	5,300	3,000	3,000	0	0	186,779	0
Cumulative Monthly Projection	70,579	97,379	128,779	148,679	161,079	173,479	182,479	187,779	190,779	193,779				62%
Cumulative Costs	25,361	42,200	48,294											42%
Cumulative Costs + Liens	67,839	93,479	74,970											42%

150,000 New FY01 Funds
43,779 Comm. C/O
0 Uncommitted C/O
193,779 Total FY01 Funding

5.2.2.5.1.3

Can/Magazine Storage Vault	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
WSRC														
Manpower Projection	0	0	0	0	0	7,000	8,000	8,000	8,000	8,000	8,000	8,000	55,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	0	0	7,000	8,000	8,000	8,000	8,000	8,000	8,000	55,000	0
Cumulative Monthly Projection	0	0	0	0	0	7,000	15,000	23,000	31,000	39,000	47,000	55,000		#DIV/0!
Cumulative Costs	0	613	613											#DIV/0!
Cumulative Costs + Liens	0	613	613											#DIV/0!

55,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
55,000 Total FY01 Funding

5.2.2.5

Second Stage Immobilization Procsse/Equip Development Total	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Lead - Tehmat Kan														
Manpower Projection	52,800	42,800	47,400	35,300	28,400	35,400	33,000	29,300	27,000	27,000	24,000	22,000	405,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	43,779	0	0	0	0	0	0	0	0	0	0	0	43,779	0
Total Monthly Projection	96,579	42,800	47,400	35,300	28,400	35,400	33,000	29,300	27,000	27,000	24,000	22,000	448,779	0
Cumulative Monthly Projection	96,579	139,379	186,779	222,079	251,079	286,479	319,479	348,779	375,779	402,779	428,779	448,779		42%
Cumulative Costs	52,043	85,616	107,691											26%
Cumulative Costs + Liens	94,321	90,201	138,365											26%

405,000 New FY01 Funds
43,779 Comm. C/O
0 Uncommitted C/O
448,779 Total FY01 Funding

IMMOBILIZATION FY01 SPEND PLAN

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5.2.3.1.1 Radiation-Damaged Sample Synthesis

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
PNNL														
Manpower Projection	33,212	38,516	42,024	44,780	52,021	59,834	64,213	65,151	52,210	48,478	47,353	45,208	595,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	33,212	38,516	42,024	44,780	52,021	59,834	64,213	65,151	52,210	48,478	47,353	45,208	595,000	0
Cumulative Monthly Projection	33,212	71,728	113,752	158,532	210,553	270,387	334,600	395,751	451,061	500,439	547,792	593,000		-11%
Cumulative Costs	33,212	66,671	125,729											-12%
Cumulative Costs + Liens	33,212	66,671	126,888											

593,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
593,000 Total FY01 Funding

5.2.3.1.2

Short-Term Corrosion Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
ANL														
Manpower Projection	10,000	15,000	8,000	15,000	15,000	10,000	10,000	10,000	10,000	8,000	7,000	6,000	124,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	10,000	15,000	8,000	15,000	15,000	10,000	10,000	10,000	10,000	8,000	7,000	6,000	124,000	0
Cumulative Monthly Projection	10,000	25,000	33,000	48,000	63,000	73,000	83,000	93,000	103,000	111,000	118,000	124,000		-73%
Cumulative Costs	23,200	40,000	57,200											-73%
Cumulative Costs + Liens	23,200	40,000	57,200											

124,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
124,000 Total FY01 Funding

5.2.3.1.3

Long-Term Corrosion Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
ANL														
Manpower Projection	20,000	30,000	20,000	33,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	339,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	17,500	0	0	0	0	0	0	0	0	0	0	0	17,500	0
Total Monthly Projection	37,500	30,000	20,000	33,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	376,500	0
Cumulative Monthly Projection	37,500	67,500	87,500	120,500	152,500	184,500	216,500	248,500	280,500	312,500	344,500	376,500		4%
Cumulative Costs	25,700	53,100	84,300											-7%
Cumulative Costs + Liens	39,200	62,100	93,300											

339,000 New FY01 Funds
17,500 Comm. C/O
0 Uncommitted C/O
376,500 Total FY01 Funding

5.2.3.1.4

Integrated Corrosion Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
ANL PNNL														
Manpower Projection	40,083	46,750	35,450	48,012	41,100	41,051	41,002	35,928	35,926	35,897	40,902	35,899	478,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	16,211	0	0	0	0	0	0	0	0	0	0	0	16,211	0
Total Monthly Projection	56,294	46,750	35,450	48,012	41,100	41,051	41,002	35,928	35,926	35,897	40,902	35,899	494,211	0
Cumulative Monthly Projection	56,294	103,044	138,494	186,506	227,606	268,657	309,659	345,587	381,513	417,410	458,312	494,211		16%
Cumulative Costs	38,313	69,973	116,846											-7%
Cumulative Costs + Liens	53,299	81,140	127,755											

478,000 New FY01 Funds
16,211 Comm. C/O
0 Uncommitted C/O
494,211 Total FY01 Funding

5.2.3.1.5

Single-Pass Flow-Through Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL PNNL														
Manpower Projection	63,682	52,559	56,559	60,564	54,840	68,040	63,682	65,227	58,137	58,417	56,559	62,720	719,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	15,478	0	0	0	0	0	0	0	0	0	0	0	15,478	0
Total Monthly Projection	79,160	52,559	56,559	60,564	54,840	68,040	63,682	65,227	58,137	58,417	56,559	62,720	734,478	0
Cumulative Monthly Projection	79,160	131,720	188,279	248,843	303,684	371,724	435,416	500,644	558,781	615,198	671,738	734,478		-1%
Cumulative Costs	63,485	109,312	189,204											-6%
Cumulative Costs + Liens	78,697	133,222	200,447											

719,000 New FY01 Funds
15,478 Comm. C/O
0 Uncommitted C/O
734,478 Total FY01 Funding

5.2.3.1.6

Dissolution Model Development

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL PNNL														
Manpower Projection	9,231	9,231	9,231	11,538	9,231	11,538	9,231	9,231	11,538	9,231	9,231	11,538	120,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	9,231	9,231	9,231	11,538	9,231	11,538	9,231	9,231	11,538	9,231	9,231	11,538	120,000	0
Cumulative Monthly Projection	9,231	18,462	27,692	39,231	48,462	60,000	69,231	78,462	90,000	99,231	108,462	120,000		-2%
Cumulative Costs	6,060	18,366	28,236											-2%
Cumulative Costs + Liens	6,060	18,366	28,236											

120,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
120,000 Total FY01 Funding

5.2.3.1

Form Performance Testing and Dissolution Modeling Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL PNNL														
Manpower Projection	176,208	192,056	171,264	212,885	204,192	222,464	220,138	217,537	199,812	190,023	193,045	193,366	2,393,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	49,189	0	0	0	0	0	0	0	0	0	0	0	49,189	0
Total Monthly Projection	225,397	192,056	171,264	212,885	204,192	222,464	220,138	217,537	199,812	190,023	193,045	193,366	2,442,189	0
Cumulative Monthly Projection	225,397	417,453	588,718	801,612	1,005,804	1,228,268	1,448,406	1,665,943	1,865,755	2,055,778	2,248,823	2,442,189		-2%
Cumulative Costs	190,570	357,421	601,575											-8%
Cumulative Costs + Liens	233,668	401,498	633,826											

2,393,000 New FY01 Funds
49,189 Comm. C/O
0 Uncommitted C/O
2,442,189 Total FY01 Funding

5.2.3.4

Form Qualification and Repository Interaction

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
LNLL WSRC, ANL, PNNL														
Manpower Projection	52,283	51,972	48,483	49,785	54,292	61,654	51,273	57,483	57,892	50,618	62,554	81,706	680,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	40	0	0	0	0	0	0	0	0	0	0	0	40	0
Total Monthly Projection	52,323	51,972	48,483	49,785	54,292	61,654	51,273	57,483	57,892	50,618	62,554	81,706	680,040	0
Cumulative Monthly Projection	52,323	104,298	152,781	202,566	256,859	318,513	369,786	427,269	485,162	535,780	598,334	680,040		-16%
Cumulative Costs	77,864	136,497	177,022											-16%
Cumulative Costs + Liens	77,904	136,537	177,062											-16%

680,000 New FY01 Funds
40 Comm. C/O
0 Uncommitted C/O
680,040 Total FY01 Funding

IMMOBILIZATION FY01 SPEND PLAN

5.2.3

D&T Form Qualification Total													Totals	Cum. Var.
Lead - Henry Shaw														
Manpower Projection	228,094	244,029	219,748	262,680	258,485	284,118	271,412	275,021	257,704	240,642	255,509	275,072	3,075,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY001 Liens	49,229	0	0	0	0	0	0	0	0	0	0	0	49,229	0
Total Monthly Projection	277,723	244,029	219,748	262,680	258,485	284,118	271,412	275,021	257,704	240,642	255,509	275,072	3,122,229	0
Cumulative Monthly Projection	277,723	521,751	741,499	1,004,178	1,262,663	1,546,781	1,818,192	2,093,213	2,350,917	2,591,538	2,847,157	3,122,229		-5%
Cumulative Costs	268,434	493,918	778,597											-9%
Cumulative Costs + Liens	311,572	538,035	810,888											

3,073,000 New FY01 Funds
49,229 Comm. C/O
0 Uncommitted C/O
3,122,229 Total FY01 Funding

5.3.1

D&T Technology Transfer													Totals	Cum. Var.
Lead - Kent Sullivan														
Manpower Projection	0	0	5,000	5,000	60,000	100,000	80,000	0	0	0	0	0	250,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY001 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	5,000	5,000	60,000	100,000	80,000	0	0	0	0	0	250,000	0
Cumulative Monthly Projection	0	0	5,000	10,000	70,000	170,000	250,000	250,000	250,000	250,000	250,000	250,000		45%
Cumulative Costs	0	613	2,841											45%
Cumulative Costs + Liens	0	613	2,841											

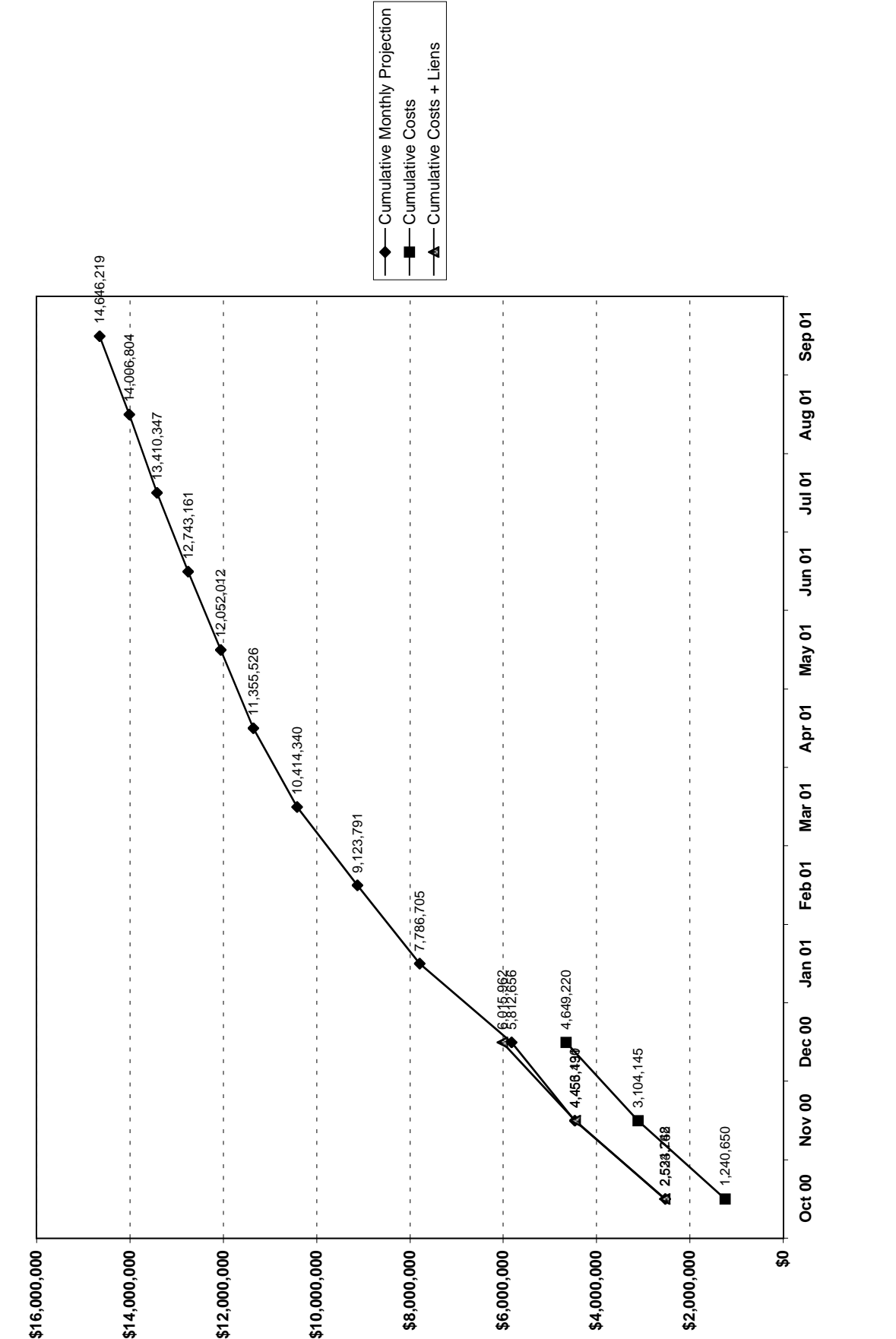
250,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
250,000 Total FY01 Funding

All Labs Immobilization and Associated Processing Total

Lead - Tom Gould													Totals	Cum. Var.
Manpower Projection	2,421,471	2,897,544	2,385,536	3,038,318	2,472,612	2,729,249	2,009,274	1,722,152	2,095,066	1,703,507	1,707,932	1,726,608	26,929,488	0
Major Procurement Projection	30,000	30,000	30,000	240,000	5,000	5,000	15,000	14,000	10,000	4,000	4,000	4,000	391,000	0
FY001 Liens	2,433,052	0	0	0	0	0	0	0	0	0	0	0	2,433,052	0
Total Monthly Projection	4,884,522	2,927,544	2,415,536	3,298,318	2,477,612	2,734,249	2,024,274	1,736,152	2,105,066	1,707,507	1,711,932	1,730,608	29,753,540	0
Cumulative Monthly Projection	4,884,522	7,812,066	10,227,602	13,526,120	16,003,732	18,737,981	20,762,255	22,498,407	24,603,473	26,310,980	28,022,932	29,753,540		30%
Cumulative Costs	2,092,470	4,746,925	7,119,273											3%
Cumulative Costs + Liens	4,910,516	7,631,693	9,950,348											

27,296,000 New FY01 Funds
2,433,052 Comm. C/O
24,488 Uncommitted C/O
Total FY01 All Labs
29,753,540 Funding

LLNL - Immobilization



LLNL FY01 Spend Plan

5.1.2

DOCDR Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Lead - Al Disabatio														
Manpower Projection	15,000	15,000											30,000	0
Major Procurement Projection													271,970	0
FY00 Liens	286,970	15,000	0	0	0	0	0	0	0	0	0	0	301,970	0
Total Monthly Projection	286,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970	301,970		
Cumulative Monthly Projection	109,515	150,110	240,181											
Cumulative Costs	285,711	246,732	539,987											20%
Cumulative Costs + Liens														-13%

30,000 New FY01 Funds
271,970 Comm. C/O
Uncommitted C/O
301,970 Total FY01 Funding

5.2.1.1

Technical Project Office

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Tom Gould														
Manpower Projection	53,000	287,000	90,000	100,000	100,000	120,000	100,000	100,000	100,000	120,000	100,000	120,000	1,370,000	0
Major Procurement Projection													116,572	0
FY00 Liens	116,572												116,572	0
Total Monthly Projection	169,572	287,000	90,000	100,000	100,000	120,000	100,000	100,000	100,000	120,000	100,000	120,000	1,486,572	0
Cumulative Monthly Projection	169,572	436,572	526,572	626,572	726,572	846,572	946,572	1,046,572	1,146,572	1,266,572	1,366,572	1,486,572		
Cumulative Costs	52,488	135,824	212,696											60%
Cumulative Costs + Liens	169,060	407,078	483,986											8%

1,370,000 New FY01 Funds
116,572 Comm. C/O
Uncommitted C/O
1,486,572 Total FY01 Funding

5.2.1.2

Quality Assurance

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Telmau Kan														
Manpower Projection	472,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	2,000	2,000	503,000	0
Major Procurement Projection													63,285	0
FY00 Liens	63,285	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	2,000	2,000	568,285	0
Total Monthly Projection	535,285	538,285	541,285	544,285	547,285	550,285	553,285	556,285	559,285	562,285	564,285	566,285		
Cumulative Monthly Projection	535,285	1,076,570	1,617,855											
Cumulative Costs	76,770	116,979	147,050											73%
Cumulative Costs + Liens	534,844	538,000	537,335											1%

503,000 New FY01 Funds
63,285 Comm. C/O
Uncommitted C/O
566,285 Total FY01 Funding

5.2.1.3

Document Control

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Al Disabatio														
Manpower Projection	380	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	19,620	228,000	0
Major Procurement Projection													164,100	0
FY00 Liens	164,100	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	19,620	164,100	0
Total Monthly Projection	164,480	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	19,620	384,100	0
Cumulative Monthly Projection	164,480	184,480	204,480	224,480	244,480	264,480	284,480	304,480	324,480	344,480	364,480	384,100		
Cumulative Costs	380	22,119	19,727											90%
Cumulative Costs + Liens	164,405	106,876	167,081											18%

220,000 New FY01 Funds
164,100 Comm. C/O
Uncommitted C/O
384,100 Total FY01 Funding

5.2.1.4

Plutonium Facility Infrastructure and Support

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Telmau Kan														
Manpower Projection	0	516,666	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	3,100,000	0
Major Procurement Projection													0	0
FY00 Liens	0	516,666	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	3,100,000	0
Total Monthly Projection	0	516,666	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333	258,333		
Cumulative Monthly Projection	0	516,666	775,000	1,033,333	1,291,666	1,550,000	1,808,333	2,066,666	2,325,000	2,583,333	2,841,666	3,100,000		36%
Cumulative Costs	0	527,625	498,851											36%
Cumulative Costs + Liens	0	527,625	498,851											

3,100,000 New FY01 Funds
0 Comm. C/O
Uncommitted C/O
3,100,000 Total FY01 Funding

5.2.1

D&T Program Management Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Lead - Telmau Kan														
Manpower Projection	325,380	806,666	371,333	381,333	381,333	401,333	381,333	381,333	381,333	401,333	380,333	399,933	5,193,000	0
Major Procurement Projection													343,957	0
FY00 Liens	343,957	0	0	0	0	0	0	0	0	0	0	0	343,957	0
Total Monthly Projection	869,337	806,666	371,333	381,333	381,333	401,333	381,333	381,333	381,333	401,333	380,333	399,933	5,536,957	0
Cumulative Monthly Projection	869,337	1,676,003	2,047,337	2,428,670	2,810,003	3,211,337	3,592,670	3,974,003	4,355,337	4,756,670	5,137,003	5,536,957		57%
Cumulative Costs	129,638	802,547	878,323											18%
Cumulative Costs + Liens	868,309	1,639,360	1,887,253											

5,193,000 New FY01 Funds
343,957 Comm. C/O
0 Uncommitted C/O
5,536,957 Total FY01 Funding

5.2.2.1.1 Feed Materials Characterization and Blending

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
AI DS/Sabatio	31,120	22,000	21,880										75,000	0
Manpower Projection														
Major Procurement Projection														
FY00 Liens	1,045												1,045	0
Total Monthly Projection	32,165	22,000	21,880	0	0	0	0	0	0	0	0	0	76,045	0
Cumulative Monthly Projection	32,165	54,165	76,045	76,045	76,045	76,045	76,045	76,045	76,045	76,045	76,045	76,045		
Cumulative Costs	31,120	69,546	74,776											
Cumulative Costs + Liens	32,165	70,591	75,821											2%
														0%

75,000 New FY01 Funds
1,045 Comm. C/O
Uncommitted C/O
76,045 Total FY01 Funding

5.2.2.1.2

Proliferation Resistance

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
AI DS/Sabatio													80,000	0
Manpower Projection													120,000	0
Major Procurement Projection														
FY00 Liens													200,000	0
Total Monthly Projection	0	0	10,000	140,000	10,000	10,000	5,000	5,000	5,000	5,000	5,000	5,000		
Cumulative Monthly Projection	0	0	10,000	150,000	160,000	170,000	175,000	180,000	185,000	190,000	195,000	200,000		
Cumulative Costs	0	0	0	0										100%
Cumulative Costs + Liens	0	0	0	0										100%

200,000 New FY01 Funds
0 Comm. C/O
Uncommitted C/O
200,000 Total FY01 Funding

5.2.2.1.3 System Integration and Cross-cutting Functions

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
AI DS/Sabatio													400,000	0
Manpower Projection													100,000	0
Major Procurement Projection														
FY00 Liens	2,861												2,861	0
Total Monthly Projection	34,752	36,609	35,500	135,500	35,500	35,000	35,000	35,000	35,000	35,000	25,000	25,000	502,861	0
Cumulative Monthly Projection	34,752	71,361	106,861	242,361	277,861	312,861	347,861	382,861	417,861	452,861	477,861	502,861		
Cumulative Costs	31,891	49,286	69,790											35%
Cumulative Costs + Liens	34,752	52,147	73,411											31%

500,000 New FY01 Funds
2,861 Comm. C/O
Uncommitted C/O
502,861 Total FY01 Funding

5.2.2.1.4

Material Transport

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
AI DS/Sabatio													0	0
Manpower Projection													0	0
Major Procurement Projection													0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Costs	0	0	0											#DIV/0!
Cumulative Costs + Liens	0	0	0											#DIV/0!

0 New FY01 Funds
0 Comm. C/O
Uncommitted C/O
0 Total FY01 Funding

Technical Support & Integration

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Lead - AI DS/Sabatio													555,000	0
Manpower Projection													220,000	0
Major Procurement Projection														
FY00 Liens	3,906												3,906	0
Total Monthly Projection	66,917	58,609	67,380	275,500	45,500	45,000	40,000	40,000	40,000	40,000	30,000	30,000	778,906	0
Cumulative Monthly Projection	66,917	125,526	192,906	468,406	513,906	558,906	598,906	638,906	678,906	718,906	748,906	778,906		
Cumulative Costs	63,011	118,832	144,506											25%
Cumulative Costs + Liens	66,917	122,738	149,231											23%

775,000 New FY01 Funds
3,906 Comm. C/O
0 Uncommitted C/O
778,906 Total FY01 Funding

Precest Control Model

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Bart Ebbingshaus													245,000	0
Manpower Projection													89,708	0
Major Procurement Projection														
FY00 Liens	89,708												331,708	0
Total Monthly Projection	168,708	216,708	252,708	288,708	314,708	331,708	331,708	331,708	331,708	331,708	331,708	331,708		
Cumulative Monthly Projection	168,708	385,416	638,124	926,832	1,241,540	1,573,248	1,904,956	2,236,664	2,568,372	2,900,080	3,231,788	3,563,496		
Cumulative Costs	78,539	130,174	221,062											13%
Cumulative Costs + Liens	168,246	219,881	270,770											-7%

242,000 New FY01 Funds
89,708 Comm. C/O
Uncommitted C/O
331,708 Total FY01 Funding

LLNL FY01 Spend Plan

Immobilized Form Development

5.2.2.2	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Total - Guy Armatrout														
Manpower Projection	79,000	48,000	36,000	34,000	28,000	17,000	0	0	0	0	0	0	242,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	89,708	0	0	0	0	0	0	0	0	0	0	0	89,708	0
Total Monthly Projection	168,708	48,000	36,000	34,000	28,000	17,000	0	0	0	0	0	0	331,708	0
Cumulative Monthly Projection	168,708	216,708	252,708	286,708	314,708	331,708	331,708	331,708	331,708	331,708	331,708	331,708		13%
Cumulative Costs	78,539	130,174	221,062											-7%
Cumulative Costs + Liens	168,246	219,881	270,770											

242,000 New FY01 Funds
89,708 Comm. C/O
0 Uncommitted C/O
331,708 Total FY01 Funding

5.2.2.3.3

Material Size Reduction

Mark Bronson														
Manpower Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Costs	-2,270	-2,270	-2,270											#DIV/0!
Cumulative Costs + Liens	-2,270	-2,270	-2,270											#DIV/0!

0 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
0 Total FY01 Funding

5.2.2.3.4

Material Unpacking and Sorting

Mark Bronson														
Manpower Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Costs	243	243	243											#DIV/0!
Cumulative Costs + Liens	243	243	243											#DIV/0!

0 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
0 Total FY01 Funding

5.2.2.3.6

Metal Conversion

Mark Bronson														
Manpower Projection	160,000	230,000	150,000	450,000	220,000	210,000	151,000	0	0	0	0	0	1,571,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	18,204	0
FY00 Liens	18,204	230,000	150,000	450,000	220,000	210,000	151,000	0	0	0	0	0	1,589,204	0
Total Monthly Projection	178,204	460,000	300,000	900,000	440,000	420,000	302,000	0	0	0	0	0	1,589,204	0
Cumulative Monthly Projection	178,204	638,204	938,204	1,388,204	1,828,204	2,248,204	2,550,204	2,550,204	2,550,204	2,550,204	2,550,204	2,550,204		-43%
Cumulative Costs	137,187	461,164	800,732											-99%
Cumulative Costs + Liens	168,972	491,739	1,100,238											

1,571,000 New FY01 Funds
18,204 Comm. C/O
0 Uncommitted C/O
1,589,204 Total FY01 Funding

5.2.2.3.7

Impure Oxide Feed Preparation

Mark Bronson														
Manpower Projection	25,000	35,000	35,000	85,000	35,000	50,000	20,000	30,000	30,000	20,000	20,000	15,000	400,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	25,000	35,000	35,000	85,000	35,000	50,000	20,000	30,000	30,000	20,000	20,000	15,000	400,000	0
Cumulative Monthly Projection	25,000	60,000	95,000	180,000	215,000	265,000	285,000	315,000	345,000	365,000	385,000	400,000		-6%
Cumulative Costs	24,078	49,606	100,545											
Cumulative Costs + Liens	24,078	49,606	100,545											

400,000 New FY01 Funds
0 Comm. C/O
0 Uncommitted C/O
400,000 Total FY01 Funding

5.2.2.3.8

Materials Characterization

Mark Bronson														
Manpower Projection	37,000	50,000	50,000	50,000	38,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	400,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	20,905	50,000	50,000	50,000	38,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	20,905	0
Total Monthly Projection	57,905	100,000	100,000	100,000	76,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	420,905	0
Cumulative Monthly Projection	57,905	157,905	257,905	357,905	433,905	483,905	508,905	533,905	558,905	583,905	608,905	633,905		-17%
Cumulative Costs	37,230	102,852	184,136											
Cumulative Costs + Liens	58,735	123,757	184,880											

400,000 New FY01 Funds
20,905 Comm. C/O
0 Uncommitted C/O
420,905 Total FY01 Funding

LLNL FY01 Spend Plan

5.2.2.5.1.2

Canister Pour Analysis and Testing

Telmau Kan	Henry Shaw												Cum. Var.
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals
Manpower Projection	3,800	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	50,000
Major Procurement Projection	779	779	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	4,579	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	50,779
Total Monthly Projection	4,579	8,379	19,779	29,079	37,079	44,479	48,479	50,779	50,779	50,779	50,779	50,779	50,779
Cumulative Monthly Projection	4,579	8,379	19,779	29,079	37,079	44,479	48,479	50,779	50,779	50,779	50,779	50,779	50,779
Cumulative Costs	3,833	3,839	2,668										
Cumulative Costs + Liens	4,611	4,618	4,344										
													87%
													78%

50,000 New FY01 Funds
779 Comm. C/O
Uncommitted C/O
50,779 Total FY01 Funding

5.2.2.5

Second Stage Immobilization

Lead - Telmau Kan	Henry Shaw												Cum. Var.
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals
Manpower Projection	3,800	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	50,000
Major Procurement Projection	779	779	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	4,579	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	50,779
Total Monthly Projection	4,579	8,379	19,779	29,079	37,079	44,479	48,479	50,779	50,779	50,779	50,779	50,779	50,779
Cumulative Monthly Projection	4,579	8,379	19,779	29,079	37,079	44,479	48,479	50,779	50,779	50,779	50,779	50,779	50,779
Cumulative Costs	3,833	3,839	2,668										
Cumulative Costs + Liens	4,611	4,618	4,344										
													87%
													78%

50,000 New FY01 Funds
779 Comm. C/O
Uncommitted C/O
50,779 Total FY01 Funding

5.2.3.1.5

Single-Pass Flow-Through Tests

Henry Shaw	Henry Shaw												Cum. Var.
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals
Manpower Projection	21,538	21,538	21,538	26,923	21,538	26,923	21,538	21,538	26,923	21,538	21,538	26,923	280,000
Major Procurement Projection													0
FY00 Liens	21,538	21,538	21,538	26,923	21,538	26,923	21,538	21,538	26,923	21,538	21,538	26,923	280,000
Total Monthly Projection	21,538	43,077	64,615	91,538	113,077	140,000	161,538	183,077	210,000	231,538	253,077	280,000	280,000
Cumulative Monthly Projection	21,538	43,077	64,615	91,538	113,077	140,000	161,538	183,077	210,000	231,538	253,077	280,000	280,000
Cumulative Costs	21,341	46,931	71,815										
Cumulative Costs + Liens	21,341	46,931	71,815										
													-11%
													-11%

280,000 New FY01 Funds
0 Comm. C/O
Uncommitted C/O
280,000 Total FY01 Funding

5.2.3.1.6

Dissolution Model Development

Henry Shaw	Henry Shaw												Cum. Var.
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals
Manpower Projection	9,231	9,231	9,231	11,538	9,231	11,538	9,231	9,231	11,538	9,231	9,231	11,538	120,000
Major Procurement Projection													0
FY00 Liens	9,231	9,231	9,231	11,538	9,231	11,538	9,231	9,231	11,538	9,231	9,231	11,538	120,000
Total Monthly Projection	9,231	18,462	27,692	39,231	48,462	60,000	69,231	78,462	90,000	99,231	108,462	120,000	120,000
Cumulative Monthly Projection	9,231	18,462	27,692	39,231	48,462	60,000	69,231	78,462	90,000	99,231	108,462	120,000	120,000
Cumulative Costs	6,660	18,366	28,236										
Cumulative Costs + Liens	6,660	18,366	28,236										
													-2%
													-2%

120,000 New FY01 Funds
0 Comm. C/O
Uncommitted C/O
120,000 Total FY01 Funding

5.2.3.1

Total Form Performance Testing and Dissolution Modeling

Henry Shaw	Henry Shaw												Cum. Var.
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals
Manpower Projection	30,769	30,769	30,769	38,462	30,769	38,462	30,769	30,769	38,462	30,769	30,769	38,462	400,000
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	30,769	30,769	30,769	38,462	30,769	38,462	30,769	30,769	38,462	30,769	30,769	38,462	400,000
Cumulative Monthly Projection	30,769	61,538	92,308	130,769	161,538	200,000	230,769	261,538	300,000	330,769	361,538	400,000	400,000
Cumulative Costs	28,001	65,296	100,051										
Cumulative Costs + Liens	28,001	65,296	100,051										
													-8%
													-8%

400,000 New FY01 Funds
0 Comm. C/O
Uncommitted C/O
400,000 Total FY01 Funding

5.2.3.4

Form Qualification and Repository Interaction

Henry Shaw	Henry Shaw												Cum. Var.
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals
Manpower Projection	21,083	21,083	21,083	26,354	21,083	26,354	21,083	21,083	26,354	21,083	26,354	47,000	300,000
Major Procurement Projection													0
FY00 Liens	40	21,083	21,083	26,354	21,083	26,354	21,083	21,083	26,354	21,083	26,354	47,000	300,000
Total Monthly Projection	21,123	42,207	65,296	89,444	110,728	137,082	158,105	179,248	205,603	226,886	253,040	300,040	300,040
Cumulative Monthly Projection	21,123	42,207	65,296	89,444	110,728	137,082	158,105	179,248	205,603	226,886	253,040	300,040	300,040
Cumulative Costs	47,067	81,611	111,288										
Cumulative Costs + Liens	47,067	81,651	111,338										
													-76%
													-76%

300,000 New FY01 Funds
40 Comm. C/O
Uncommitted C/O
300,040 Total FY01 Funding

LLNL FY01 Spend Plan

5.2.3

D&T Form Qualification Total													Cum.
Lead - Henry Shaw													Var.
Manpower Projection	51,853	51,853	51,853	64,816	51,853	51,853	64,816	51,853	51,853	64,816	51,853	85,462	700,000
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	40	0	0	0	0	0	0	0	0	0	0	0	40
Total Monthly Projection	51,893	51,853	51,853	64,816	51,853	51,853	64,816	51,853	51,853	64,816	51,853	85,462	700,040
Cumulative Monthly Projection	51,893	103,745	155,598	220,413	272,266	327,082	388,934	440,787	505,603	557,455	614,578	700,040	
Cumulative Costs	75,068	146,907	211,349										-36%
Cumulative Costs + Liens	75,708	146,947	211,389										-36%

700,000 New FY01 Funds
40 Comm. C/O
0 Uncommitted C/O
700,040 Total FY01 Funding

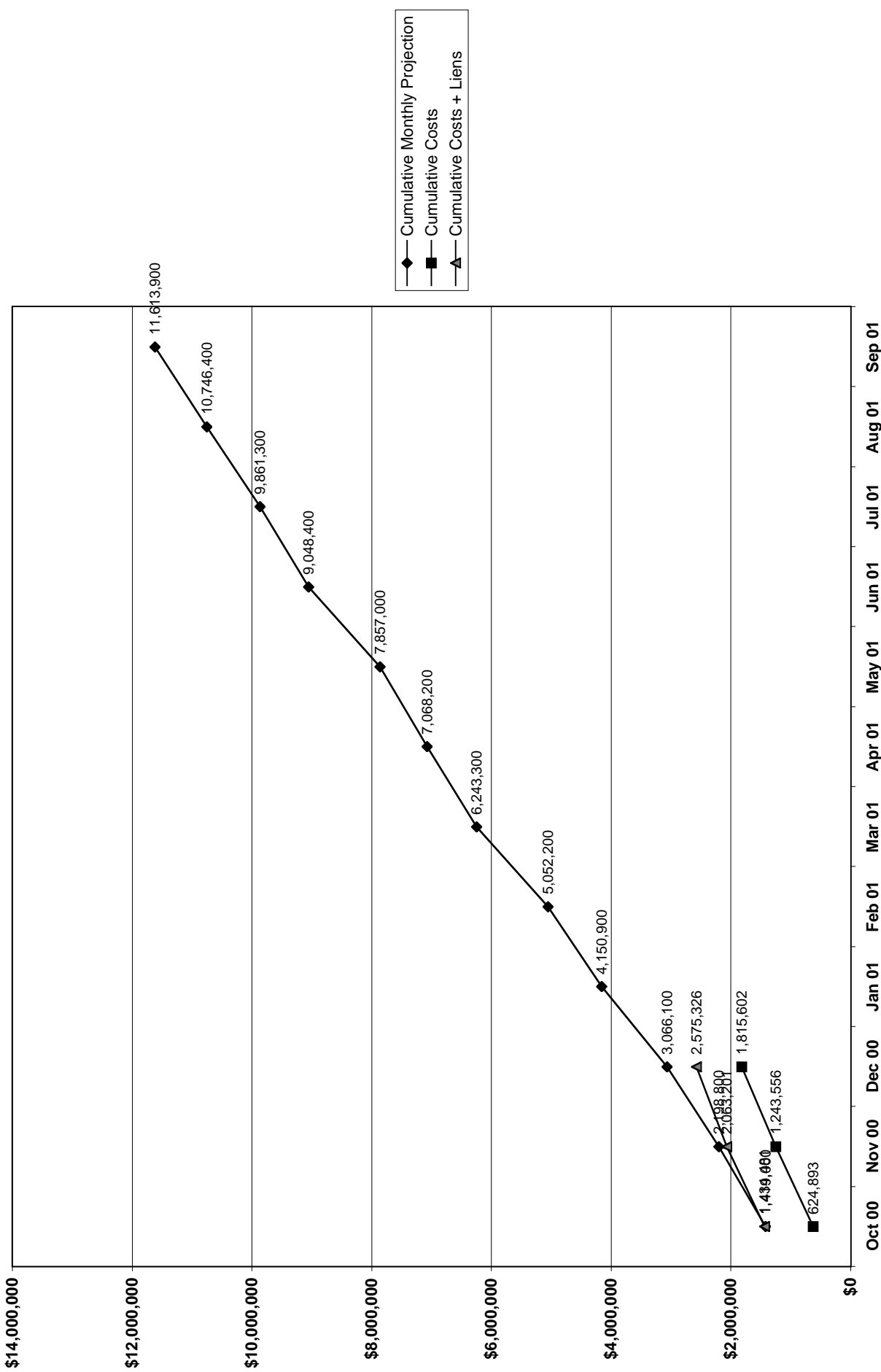
LLNL Immobilization and Associated Processing Total

Lead - Tom Gould													Cum.
Manpower Projection	1,543,544	1,902,428	1,326,466	1,724,049	1,332,086	1,265,549	926,186	682,486	681,149	663,186	592,457	635,415	13,305,000
Major Procurement Projection	30,000	30,000	30,000	240,000	5,000	5,000	15,000	14,000	10,000	4,000	4,000	4,000	390,000
FY00 Liens	950,219	0	0	0	0	0	0	0	0	0	0	0	950,219
Total Monthly Projection	2,523,762	1,932,428	1,356,466	1,974,049	1,337,086	1,280,549	941,186	696,486	691,149	667,186	596,457	639,415	14,646,219
Cumulative Monthly Projection	2,523,762	4,456,190	5,812,656										
Cumulative Costs	1,240,650	3,104,145	4,649,220	7,786,705	9,123,791	10,414,340	11,355,526	12,052,012	12,743,161	13,410,347	14,006,804	14,946,219	20%
Cumulative Costs + Liens	2,534,248	4,453,431	6,015,962										-3%

13,696,000 New FY01 Funds
950,219 Comm. C/O
0 Uncommitted C/O
14,646,219 Total FY01 Funding
0 Funds not allocated

13,696,000 New Funding
950,219 Committed Carryover
0 Uncommitted Carryover - app

WSRC - Immobilization



WSRC Immobilization Spend Plan

WSRC FY01 Spend Plan

5.1.2

DOCDR

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Cumulative Costs + Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!

0 FY00 Funding
0 Comm. C/O
0 Unrob C/O
0 Total FY00 Funding

5.2.1.1

Technical Project Office

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	32,000	32,000	32,000	35,000	35,000	45,000	45,000	45,000	50,000	50,000	50,000	49,000	500,000	0
Major Procurement Projection													0	0
FY00 Liens	32,000	32,000	32,000	35,000	35,000	45,000	45,000	45,000	50,000	50,000	50,000	49,000	500,000	0
Total Monthly Projection	32,000	64,000	96,000	131,000	166,000	211,000	256,000	301,000	351,000	401,000	451,000	500,000	500,000	0
Cumulative Monthly Projection	32,000	64,000	96,000	131,000	166,000	211,000	256,000	301,000	351,000	401,000	451,000	500,000	500,000	0
Cumulative Costs	30,428	69,412	95,452											1%
Cumulative Costs + Liens	30,428	69,412	95,452											1%

500,000 FY00 Funding
0 Comm. C/O
0 Unrob C/O
500,000 Total FY00 Funding

5.2.1.2

Quality Assurance

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	7,700	11,100	10,200	10,500	16,400	18,700	14,000	17,100	15,400	13,700	17,100	18,100	170,000	0
Major Procurement Projection													0	0
FY00 Liens	13,500	11,100	10,200	10,500	16,400	18,700	14,000	17,100	15,400	13,700	17,100	18,100	13,500	0
Total Monthly Projection	21,200	32,300	42,500	53,000	69,400	88,100	102,100	119,200	134,900	148,300	165,400	183,500	183,500	0
Cumulative Monthly Projection	21,200	32,300	42,500	53,000	69,400	88,100	102,100	119,200	134,900	148,300	165,400	183,500	183,500	0
Cumulative Costs	11,730	23,738	37,939											11%
Cumulative Costs + Liens	63,530	84,238	93,491											-120%

170,000 FY00 Funding
13,500 Comm. C/O
0 Unrob C/O
183,500 Total FY00 Funding

5.2.1.3

Document Control

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	12,000	10,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	6,000	100,000	0
Major Procurement Projection													0	0
FY00 Liens	400	10,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	6,000	400	0
Total Monthly Projection	12,400	22,400	30,400	38,400	46,400	54,400	62,400	70,400	78,400	86,400	94,400	100,400	100,400	0
Cumulative Monthly Projection	12,400	22,400	30,400	38,400	46,400	54,400	62,400	70,400	78,400	86,400	94,400	100,400	100,400	0
Cumulative Costs	11,481	22,826	29,878											2%
Cumulative Costs + Liens	11,769	23,210	30,262											0%

100,000 FY00 Funding
400 Comm. C/O
0 Unrob C/O
100,400 Total FY00 Funding

5.2.1

D&T Program Management Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	51,700	53,100	50,200	53,500	59,400	71,700	67,000	70,100	73,400	71,700	75,100	73,100	770,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	13,900	0	0	0	0	0	0	0	0	0	0	0	13,900	0
Total Monthly Projection	65,600	53,100	50,200	53,500	59,400	71,700	67,000	70,100	73,400	71,700	75,100	73,100	783,900	0
Cumulative Monthly Projection	65,600	118,700	168,900	222,400	281,800	353,500	420,300	490,600	564,000	635,700	710,800	783,900	783,900	0
Cumulative Costs	53,639	115,976	163,269											3%
Cumulative Costs + Liens	105,727	176,880	219,205											-30%

770,000 FY00 Funding
13,900 Comm. C/O
0 Unrob C/O
783,900 Total FY00 Funding

Feed Materials Characterization and Blending

5.2.2.1.1

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	6,500	8,000	8,500	15,000	18,000	20,000	22,300	22,300	22,300	22,300	22,300	22,500	210,000	0
Major Procurement Projection													0	0
FY00 Liens	6,500	8,000	8,500	15,000	18,000	20,000	22,300	22,300	22,300	22,300	22,300	22,500	210,000	0
Total Monthly Projection	6,500	14,500	23,000	38,000	56,000	76,000	98,300	120,600	142,900	165,200	187,500	210,000	210,000	0
Cumulative Monthly Projection	6,500	14,500	23,000	38,000	56,000	76,000	98,300	120,600	142,900	165,200	187,500	210,000	210,000	0
Cumulative Costs	6,120	13,734	26,462											-15%
Cumulative Costs + Liens	6,120	13,734	26,462											-15%

210,000 FY00 Funding
0 Comm. C/O
0 Unrob C/O
210,000 Total FY00 Funding

WSRC Immobilization Spend Plan

5.2.2.1.2

Proliferation Resistance

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection													0	0
Major Procurement Projection													0	0
FY00 Liens													0	0
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Cumulative Costs + Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!

0 FY00 Funding
0 Comm. C/O
0 Unob. C/O
0 Total FY00 Funding

5.2.2.1.3

System Integration and Cross-cutting Functions

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	101,000	93,000	83,000	58,000	68,000	77,000	30,000	0	0	0	0	0	510,000	0
Major Procurement Projection													0	0
FY00 Liens													0	0
Total Monthly Projection	101,000	93,000	83,000	58,000	68,000	77,000	30,000	0	0	0	0	0	510,000	0
Cumulative Monthly Projection	101,000	194,000	277,000	335,000	403,000	480,000	510,000	510,000	510,000	510,000	510,000	510,000	510,000	0
Cumulative Costs	101,741	192,793	270,237	335,000	403,000	480,000	510,000	510,000	510,000	510,000	510,000	510,000	510,000	2%
Cumulative Costs + Liens	101,741	192,793	270,237	335,000	403,000	480,000	510,000	510,000	510,000	510,000	510,000	510,000	510,000	2%

510,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
510,000 Total FY00 Funding

5.2.2.1.4

Material Transport

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	3,000	3,000	3,000	5,000	5,000	5,000	10,000	10,000	8,000	4,000	4,000	60,000	0
Major Procurement Projection													0	0
FY00 Liens													0	0
Total Monthly Projection	0	3,000	3,000	3,000	5,000	5,000	5,000	10,000	10,000	8,000	4,000	4,000	60,000	0
Cumulative Monthly Projection	0	3,000	6,000	9,000	14,000	19,000	24,000	34,000	44,000	52,000	56,000	60,000	60,000	-1%
Cumulative Costs	0	1,597	6,077	9,000	14,000	19,000	24,000	34,000	44,000	52,000	56,000	60,000	60,000	-1%
Cumulative Costs + Liens	0	1,597	6,077	9,000	14,000	19,000	24,000	34,000	44,000	52,000	56,000	60,000	60,000	-1%

60,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
60,000 Total FY00 Funding

5.2.2.1.5

Waste Handling System

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	5,500	4,500	4,000	6,000	12,000	12,000	16,000	10,000	10,000	10,000	10,000	10,000	110,000	0
Major Procurement Projection													0	0
FY00 Liens													0	0
Total Monthly Projection	5,500	4,500	4,000	6,000	12,000	12,000	16,000	10,000	10,000	10,000	10,000	10,000	110,000	0
Cumulative Monthly Projection	5,500	10,000	14,000	20,000	32,000	44,000	60,000	70,000	80,000	90,000	100,000	110,000	110,000	24%
Cumulative Costs	5,389	6,134	10,636	20,000	32,000	44,000	60,000	70,000	80,000	90,000	100,000	110,000	110,000	24%
Cumulative Costs + Liens	5,389	6,134	10,636	20,000	32,000	44,000	60,000	70,000	80,000	90,000	100,000	110,000	110,000	24%

110,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
110,000 Total FY00 Funding

5.2.2.1

Technical Support & Integration

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	113,000	108,500	98,500	82,000	103,000	114,000	73,300	42,300	42,300	40,300	36,300	36,500	880,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	113,000	108,500	98,500	82,000	103,000	114,000	73,300	42,300	42,300	40,300	36,300	36,500	880,000	0
Cumulative Monthly Projection	113,000	221,500	320,000	402,000	505,000	619,000	692,300	734,600	776,900	817,200	853,500	890,000	890,000	2%
Cumulative Costs	113,260	214,258	315,412	402,000	505,000	619,000	692,300	734,600	776,900	817,200	853,500	890,000	890,000	2%
Cumulative Costs + Liens	113,260	214,258	315,412	402,000	505,000	619,000	692,300	734,600	776,900	817,200	853,500	890,000	890,000	2%

890,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
890,000 Total FY00 Funding

5.2.2.2.3

Development

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	34,700	49,100	34,300	36,300	49,100	54,800	10,300	16,200	13,700	11,000	16,200	16,300	342,000	0
Major Procurement Projection													0	0
FY00 Liens	2,000												2,000	0
Total Monthly Projection	36,700	49,100	34,300	36,300	49,100	54,800	10,300	16,200	13,700	11,000	16,200	16,300	344,000	0
Cumulative Monthly Projection	36,700	85,800	120,100	156,400	205,500	260,300	270,600	286,800	300,500	311,500	327,700	344,000	344,000	26%
Cumulative Costs	22,097	45,313	88,882	156,400	205,500	260,300	270,600	286,800	300,500	311,500	327,700	344,000	344,000	26%
Cumulative Costs + Liens	35,097	55,978	88,882	156,400	205,500	260,300	270,600	286,800	300,500	311,500	327,700	344,000	344,000	26%

342,000 FY00 Funding
2,000 Comm. C/O
0 Unob. C/O
344,000 Total FY00 Funding

5.2.2.2

Immobilized Form Development

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	34,700	49,100	34,300	36,300	49,100	54,800	10,300	16,200	13,700	11,000	16,200	16,300	342,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	2,000	0	0	0	0	0	0	0	0	0	0	0	2,000	0
Total Monthly Projection	36,700	49,100	34,300	36,300	49,100	54,800	10,300	16,200	13,700	11,000	16,200	16,300	344,000	0
Cumulative Monthly Projection	36,700	85,800	120,100	156,400	205,500	260,300	270,600	286,800	300,500	311,500	327,700	344,000	344,000	26%
Cumulative Costs	22,097	45,313	88,882	156,400	205,500	260,300	270,600	286,800	300,500	311,500	327,700	344,000	344,000	26%
Cumulative Costs + Liens	35,097	55,978	88,882	156,400	205,500	260,300	270,600	286,800	300,500	311,500	327,700	344,000	344,000	26%

342,000 FY00 Funding
2,000 Comm. C/O
0 Unob. C/O
344,000 Total FY00 Funding

WSRC Immobilization Spend Plan

5.2.2.3.1

Material Receipt & Storage

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	55,000	0
Major Procurement Projection													0	0
FY00 Liens	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	55,000	0
Total Monthly Projection	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	55,000	0
Cumulative Monthly Projection	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000	55,000		
Cumulative Costs	0	2,701	10,066											-1%
Cumulative Costs + Liens	0	2,701	10,066											-1%

5.2.2.3.2

Material Size Reduction

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection			7,500	7,500	7,500	7,500							30,000	0
Major Procurement Projection													0	0
FY00 Liens			7,500	7,500	7,500	7,500	0	0	0	0	0	0	30,000	0
Total Monthly Projection	0	0	7,500	7,500	7,500	7,500	0	0	0	0	0	0	30,000	0
Cumulative Monthly Projection	0	0	7,500	15,000	22,500	30,000	30,000	30,000	30,000	30,000	30,000	30,000		
Cumulative Costs	0	0	0	0										100%
Cumulative Costs + Liens	0	0	0	0										100%

5.2.2.3.4

Material Unpacking and Sorting

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	10,000	7,600	9,600	14,600	15,600	16,000	9,600	7,600	9,600	7,600	9,600	7,600	125,000	0
Major Procurement Projection													0	0
FY00 Liens	10,000	7,600	9,600	14,600	15,600	16,000	9,600	7,600	9,600	7,600	9,600	7,600	125,000	0
Total Monthly Projection	10,000	7,600	9,600	14,600	15,600	16,000	9,600	7,600	9,600	7,600	9,600	7,600	125,000	0
Cumulative Monthly Projection	10,000	17,600	27,200	41,800	57,400	73,400	83,000	90,600	100,200	107,800	117,400	125,000		
Cumulative Costs	9,587	16,002	22,791											16%
Cumulative Costs + Liens	9,587	16,002	22,791											16%

5.2.2.3.6

Metal Conversion

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	10,000	10,000	0	0	0	0	0	0	0	0	0	20,000	0
Major Procurement Projection													0	0
FY00 Liens	0	10,000	10,000	0	0	0	0	0	0	0	0	0	20,000	0
Total Monthly Projection	0	10,000	10,000	0	0	0	0	0	0	0	0	0	20,000	0
Cumulative Monthly Projection	0	10,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000		
Cumulative Costs	0	0	0	0										100%
Cumulative Costs + Liens	0	0	0	0										100%

5.2.2.3.7

Impure Oxide Feed Preparation

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection		10,000	10,000										20,000	0
Major Procurement Projection													0	0
FY00 Liens	0	10,000	10,000	0	0	0	0	0	0	0	0	0	20,000	0
Total Monthly Projection	0	10,000	10,000	0	0	0	0	0	0	0	0	0	20,000	0
Cumulative Monthly Projection	0	10,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000		
Cumulative Costs	0	0	11,051											45%
Cumulative Costs + Liens	0	0	11,051											45%

5.2.2.3.8

Materials Characterization

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	14,200	21,100	17,100	12,100	22,100	22,100	15,800	21,100	19,200	16,700	20,000	38,500	240,000	0
Major Procurement Projection													0	0
FY00 Liens	14,200	21,100	17,100	12,100	22,100	22,100	15,800	21,100	19,200	16,700	20,000	38,500	240,000	0
Total Monthly Projection	14,200	21,100	17,100	12,100	22,100	22,100	15,800	21,100	19,200	16,700	20,000	38,500	240,000	0
Cumulative Monthly Projection	14,200	35,300	52,400	64,500	86,600	108,700	124,500	145,600	164,800	181,500	201,500	240,000		
Cumulative Costs	13,270	30,166	43,426											17%
Cumulative Costs + Liens	13,270	30,166	43,426											17%

5.2.2.3.9

Material Control & Accountability

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	0	22,000	0
Major Procurement Projection													0	0
FY00 Liens	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	0	22,000	0
Total Monthly Projection	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	0	22,000	0
Cumulative Monthly Projection	0	0	0	5,000	10,000	16,000	22,000	22,000	22,000	22,000	22,000	22,000		
Cumulative Costs	0	0	0											#DIV/0!
Cumulative Costs + Liens	0	0	0											#DIV/0!

55,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
55,000 Total FY00 Funding

30,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
30,000 Total FY00 Funding

125,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
125,000 Total FY00 Funding

20,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
20,000 Total FY00 Funding

20,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
20,000 Total FY00 Funding

240,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
240,000 Total FY00 Funding

22,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
22,000 Total FY00 Funding

WSRC Immobilization Spend Plan

5.2.2.3.1.0	In-Process Storage Vault	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
	Manpower Projection	0	0	0	5,000	5,000	5,000	5,000	5,000	0	0	0	0	20,000	0
	Major Procurement Projection													0	0
	FY00 Liens	0	0	0	5,000	5,000	5,000	5,000	5,000	0	0	0	0	20,000	0
	Total Monthly Projection	0	0	0	5,000	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
	Cumulative Monthly Projection	0	0	0	5,000	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
	Cumulative Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cumulative Costs + Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0

20,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
20,000 Total FY00 Funding

Pu Conversion Process/Equipment

5.2.2.3	Development Total	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
	Manpower Projection	24,200	33,700	59,200	49,200	60,200	61,600	41,400	33,700	33,800	29,300	34,600	51,100	532,000	0
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Monthly Projection	24,200	33,700	59,200	49,200	60,200	61,600	41,400	33,700	33,800	29,300	34,600	51,100	532,000	0
	Cumulative Monthly Projection	24,200	77,900	137,100	186,300	246,500	308,100	349,500	383,200	417,000	446,300	480,900	532,000	532,000	0
	Cumulative Costs	22,857	48,869	87,334											38%
	Cumulative Costs + Liens	22,857	48,869	87,334											38%

532,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
532,000 Total FY00 Funding

5.2.2.4.1 Ceramic Feed Batching

	13,400	39,200	39,700	32,200	42,200	58,100	47,300	45,200	41,700	33,900	41,800	35,300	470,000	0	0	0	0	Var.
Manpower Projection																		
Major Procurement Projection																		
FY00 Liens																		
Total Monthly Projection	13,400	39,200	39,700	32,200	42,200	58,100	47,300	45,200	41,700	33,900	41,800	35,300	470,000	0	0	0	0	
Cumulative Monthly Projection	13,400	52,600	92,300	124,500	166,700	224,800	272,100	317,300	359,000	392,900	434,700	470,000	470,000					
Cumulative Costs	12,797	29,551	47,574															48%
Cumulative Costs + Liens	12,797	29,551	47,574															48%

470,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
470,000 Total FY00 Funding

5.2.2.4.2.1 Ceramification Process

5.2.2.42.1	Development	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
	Manpower Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Major Procurement Projection													0	0
	FY00 Liens													0	0
	Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0		
	Cumulative Costs	0	0	0	0	0	0	0	0	0	0	0	0		
	Cumulative Costs + Liens	0	0	0	0	0	0	0	0	0	0	0	0		
					</										

0 FY00 Funding
0 Comm. C/O
0 Unob C/O
0 Total FY00 Funding

5.2.2.4.2.3 Ceramification Prototype Test Facility (CPTF)

Facility (CPTF)	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	281,500	320,700	400,400	678,000	297,100	470,800	302,800	338,300	761,300	429,400	439,700	395,000	5,115,000	0
Major Procurement Projection														
FY00 Liens	457,300												457,300	0
Total Monthly Projection	738,800	320,700	400,400	678,000	297,100	470,800	302,800	338,300	761,300	429,400	439,700	395,000	5,572,300	
Cumulative Monthly Projection	738,800	1,059,500	1,459,900	2,137,900	2,435,000	2,905,800	3,208,600	3,546,900	4,308,200	4,737,600	5,177,300	5,572,300		
Cumulative Costs	263,915	522,441	751,385											49%
Cumulative Costs + Liens	721,215	968,988	1,180,475											19%

5,115,000 FY00 Funding
457,300 Comm. C/O
0 Unob C/O
5,572,300 Total FY00 Funding

5.2.2.4.2.2 Plutonium Ceramic Test Facility (PuCTF)

3.5.2.4.2.2	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Var.
(P+U+T)														
Manpower Projection	30,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	80,000	480,000	0
Major Procurement Projection													0	0
FY00 Liens													0	0
Total Monthly Projection	30,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	80,000	480,000	0
Cumulative Monthly Projection	30,000	67,000	104,000	141,000	178,000	215,000	252,000	289,000	326,000	363,000	400,000	480,000	480,000	0
Cumulative Costs	28,875	56,977	83,939											19%
Cumulative Costs + Liens	28,875	56,977	83,939											19%

480,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
480,000 Total FY00 Funding

5.2.2.4.3 Puck NDE/MC&A for Process Control and SNM Accountability

Control and SNM Accountability	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Var.
Manpower Projection	5,500	25,100	48,900	41,200	111,900	123,300	79,800	117,500	100,400	83,000	115,900	104,500	957,000	
Major Procurement Projection													0	
FY00 Liens	245,700												245,700	
Total Monthly Projection	251,200	25,100	48,900	41,200	111,900	123,300	79,800	117,500	100,400	83,000	115,900	104,500	1,202,700	
Cumulative Monthly Projection	251,200	276,300	325,200	366,400	478,300	601,600	681,400	798,900	899,300	982,300	1,098,200	1,202,700		
Cumulative Costs	5,372	20,481	37,399											88%
Cumulative Costs + Liens	251,072	266,181	283,099											13%

957,000 FY00 Funding
245,700 Comm. C/O
0 Unob C/O
1,202,700 Total FY00 Funding

WSRC Immobilization Spend Plan

5.2.2.4.5

Can Loading

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	40,800	27,900	34,400	27,900	28,900	36,500	29,900	28,900	34,400	28,900	35,500	28,000	382,000	0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	40,800	27,900	34,400	27,900	28,900	36,500	29,900	28,900	34,400	28,900	35,500	28,000	382,000	0
Cumulative Monthly Projection	40,800	68,700	103,100	131,000	159,900	196,400	226,300	255,200	289,600	318,500	354,000	382,000		
Cumulative Costs	41,141	75,622	97,617											5%
Cumulative Costs + Liens	41,141	75,622	97,617											5%

382,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
382,000 Total FY00 Funding

5.2.2.4.6

Can MC&A

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	4,000	7,300	8,200	7,300	12,300	14,100	11,800	11,300	9,100	7,300	9,000	7,300	109,000	0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	4,000	7,300	8,200	7,300	12,300	14,100	11,800	11,300	9,100	7,300	9,000	7,300	109,000	0
Cumulative Monthly Projection	4,000	11,300	19,500	26,800	39,100	53,200	65,000	76,300	85,400	92,700	101,700	109,000		
Cumulative Costs	3,935	6,307	7,304											63%
Cumulative Costs + Liens	3,935	6,307	7,304											63%

109,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
109,000 Total FY00 Funding

First Stage Immobilization Process/

Equip Development Total

5.2.2.4

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	375,200	457,200	568,600	823,600	529,400	739,800	508,600	578,200	983,900	619,500	678,900	650,100	7,513,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0		0
FY00 Liens	703,000	0	0	0	0	0	0	0	0	0	0	0	703,000	0
Total Monthly Projection	1,078,200	457,200	568,600	823,600	529,400	739,800	508,600	578,200	983,900	619,500	678,900	650,100		
Cumulative Monthly Projection	1,078,200	1,535,400	2,104,000	2,927,600	3,457,000	4,196,800	4,705,400	5,283,600	6,267,500	6,887,000	7,565,900	8,216,000		
Cumulative Costs	356,035	711,379	1,025,218											51%
Cumulative Costs + Liens	1,059,035	1,403,626	1,700,008											19%

7,513,000 FY00 Funding
703,000 Comm. C/O
0 Unob. C/O
8,216,000 Total FY00 Funding

Can-in-Canister Design and Assembly

5.2.2.5.1.1

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	26,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	14,000	200,000	0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	26,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	14,000	200,000	0
Cumulative Monthly Projection	26,000	42,000	58,000	74,000	90,000	106,000	122,000	138,000	154,000	170,000	186,000	200,000		-1%
Cumulative Costs	26,482	42,803	58,784											-8%
Cumulative Costs + Liens	26,482	48,152	62,782											

200,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
200,000 Total FY00 Funding

5.2.2.5.1.2

Canister Pour Analysis and Testing

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	23,000	23,000	20,000	10,000	5,000	5,000	5,000	3,000	3,000	3,000	0	0	100,000	0
Major Procurement Projection														0
FY00 Liens	43,000												43,000	0
Total Monthly Projection	66,000	23,000	20,000	10,000	5,000	5,000	5,000	3,000	3,000	3,000	0	0	143,000	0
Cumulative Monthly Projection	66,000	89,000	109,000	119,000	124,000	129,000	134,000	137,000	140,000	143,000	143,000	143,000		58%
Cumulative Costs	21,728	38,361	45,626											35%
Cumulative Costs + Liens	63,228	88,861	70,626											

100,000 FY00 Funding
43,000 Comm. C/O
0 Unob. C/O
143,000 Total FY00 Funding

5.2.2.5.1.3

Can/Magazine Storage Vault

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	0	0	0	0	0	7,000	8,000	8,000	8,000	8,000	8,000	55,000	0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	0	0	0	0	0	0	7,000	8,000	8,000	8,000	8,000	8,000	55,000	0
Cumulative Monthly Projection	0	0	0	0	0	0	7,000	15,000	23,000	31,000	39,000	47,000		#DIV/0!
Cumulative Costs	0	613	613											#DIV/0!
Cumulative Costs + Liens	0	613	613											

55,000 FY00 Funding
0 Comm. C/O
0 Unob. C/O
55,000 Total FY00 Funding

Second Stage Immobilization Process/Equip Development Total

5.2.2.5

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	49,000	39,000	36,000	26,000	21,000	28,000	29,000	27,000	27,000	27,000	24,000	22,000	355,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0		0
FY00 Liens	43,000	0	0	0	0	0	0	0	0	0	0	0	43,000	0
Total Monthly Projection	92,000	39,000	36,000	26,000	21,000	28,000	29,000	27,000	27,000	27,000	24,000	22,000		
Cumulative Monthly Projection	92,000	131,000	167,000	193,000	214,000	242,000	271,000	298,000	325,000	352,000	376,000	398,000		37%
Cumulative Costs	48,210	81,777	105,023											20%
Cumulative Costs + Liens	89,710	137,626	134,021											

355,000 FY00 Funding
43,000 Comm. C/O
0 Unob. C/O
398,000 Total FY00 Funding

WSRC Immobilization Spend Plan

5.2.3.4 Form Qualification and Repository Interaction

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	9,300	19,200	15,500	9,200	19,200	21,200	15,300	21,300	17,300	14,100	20,000	18,400	200,000	0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	9,300	19,200	15,500	9,200	19,200	21,200	15,300	21,300	17,300	14,100	20,000	18,400	200,000	0
Cumulative Monthly Projection	9,300	28,500	44,000	53,200	72,400	93,600	108,900	130,200	147,500	161,600	181,600	200,000		
Cumulative Costs	8,795	25,371	29,623											33%
Cumulative Costs + Liens	8,795	25,371	29,623											33%

200,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
200,000 Total FY00 Funding

5.2.3

D&T Form Qualification Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	9,300	19,200	15,500	9,200	19,200	21,200	15,300	21,300	17,300	14,100	20,000	18,400	200,000	0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	9,300	19,200	15,500	9,200	19,200	21,200	15,300	21,300	17,300	14,100	20,000	18,400	200,000	0
Cumulative Monthly Projection	9,300	28,500	44,000	53,200	72,400	93,600	108,900	130,200	147,500	161,600	181,600	200,000		
Cumulative Costs	8,795	25,371	29,623											33%
Cumulative Costs + Liens	8,795	25,371	29,623											33%

200,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
200,000 Total FY00 Funding

5.3.1

D&T Technology Transfer

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	0	0	5,000	5,000	60,000	100,000	80,000	0	0	0	0	0	250,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	0	0	5,000	5,000	60,000	100,000	80,000	0	0	0	0	0	250,000	0
Cumulative Monthly Projection	0	0	5,000	10,000	70,000	170,000	250,000	250,000	250,000	250,000	250,000	250,000		
Cumulative Costs	0	613	2,841											43%
Cumulative Costs + Liens	0	613	2,841											43%

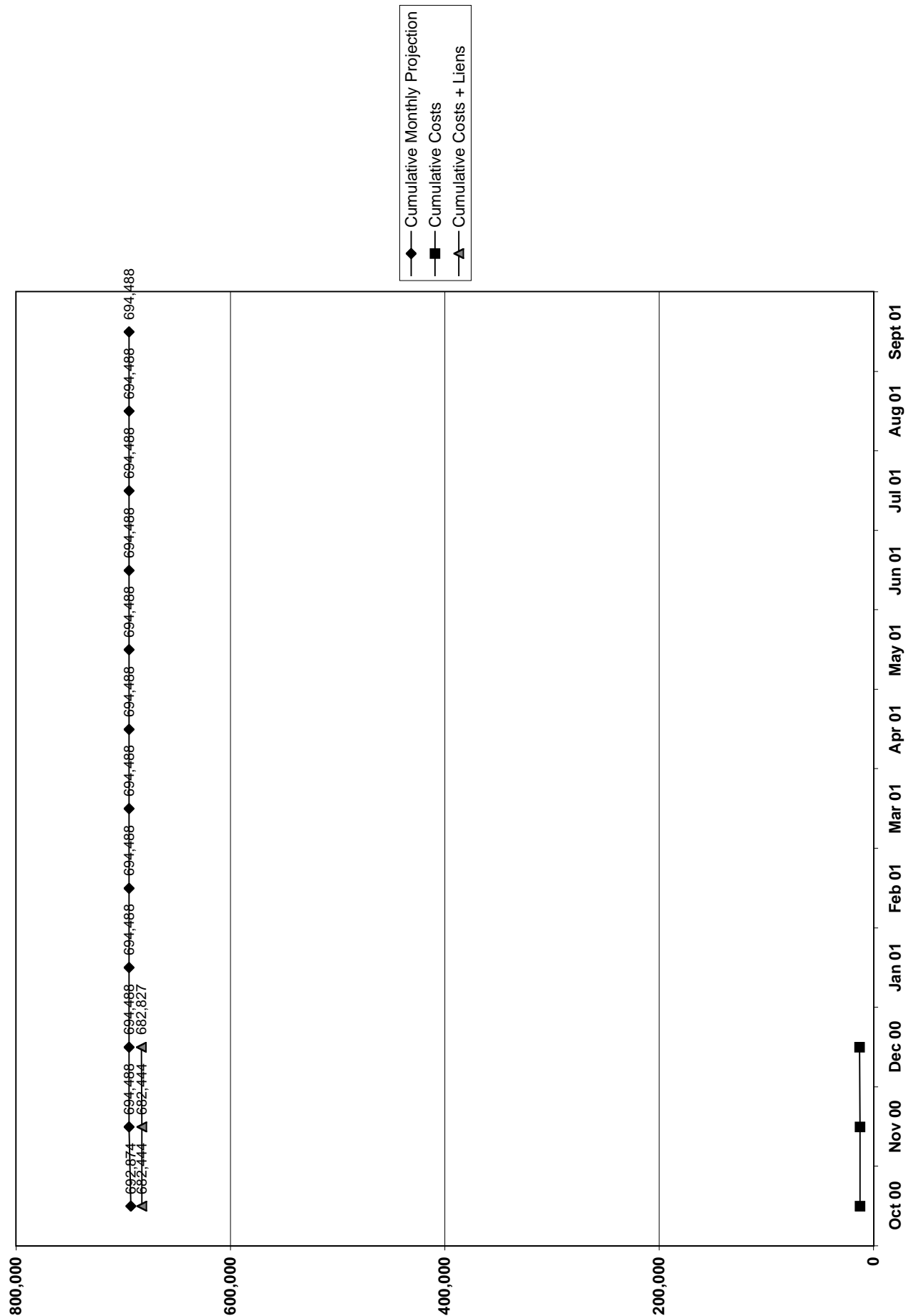
250,000 FY00 Funding
0 Comm. C/O
0 Unob C/O
250,000 Total FY00 Funding

WSRC Immobilization and Associated Processing Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.
Manpower Projection	657,100	779,800	867,300	1,084,800	901,300	1,191,100	824,900	788,800	1,191,400	812,900	885,100	867,500	10,852,000	0
Major Procurement Projection														0
FY00 Liens	761,900	0	0	0	0	0	0	0	0	0	0	0	761,900	0
Total Monthly Projection	1,419,000	779,800	867,300	1,084,800	901,300	1,191,100	824,900	788,800	1,191,400	812,900	885,100	867,500	11,613,900	0
Cumulative Monthly Projection	1,419,000	2,198,800	3,066,100	4,150,900	5,052,200	6,243,300	7,068,200	7,857,000	9,048,400	9,861,300	10,746,400	11,613,900		
Cumulative Costs	624,893	1,243,556	1,815,602											41%
Cumulative Costs + Liens	1,434,481	2,063,201	2,575,326											16%

10,852,000 FY00 Funding
761,900 Comm. C/O
0 Unob C/O
11,613,900 Total FY00 Funding

CLEMSON - Immobilization



Clemson FY01 Spend Plan

5.2.2.4.3 Ceramic Prototypic Test Facility (CPTF)

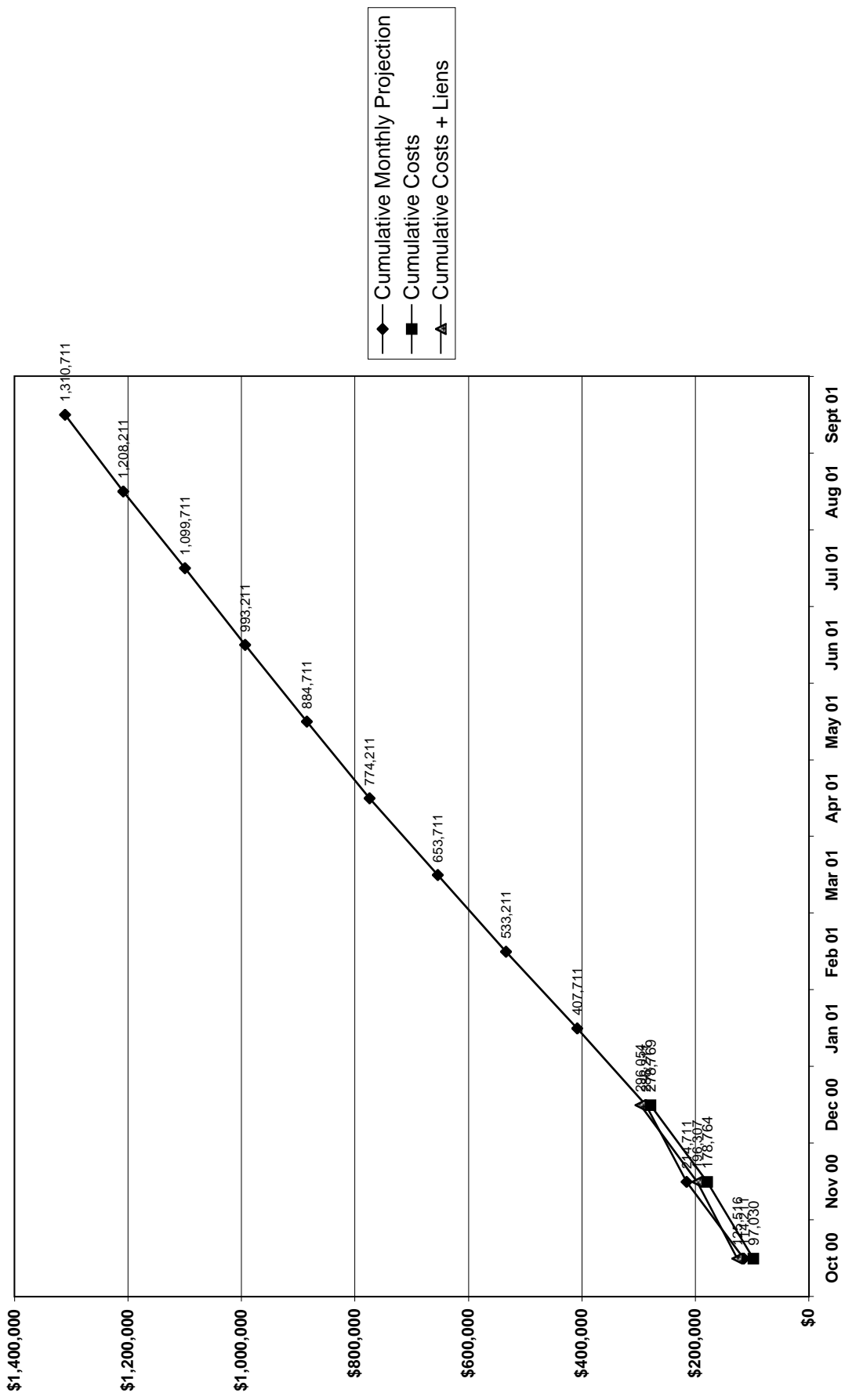
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	22,874	1,614	0	0	0	0	0	0	0	0	0	0	24,488	0
Major Procurement Projection FY00 Liens	670,000												670,000	0
Total Monthly Projection	692,874	1,614	0	0	0	0	0	0	0	0	0	0	694,488	0
Cumulative Monthly Projection	692,874	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488		
Cumulative Costs	12,444	12,444	12,827											98%
Cumulative Costs + Liens	682,444	682,444	682,827											2%

0 FY01 Funding
670,000 Comm. C/O
24,488 Unob C/O
694,488 Total FY01 Funding

TOTAL - CLEMSON														
	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	22,874	1,614	0	0	0	0	0	0	0	0	0	0	24,488	0
Major Procurement Projection FY00 Liens	670,000	0	0	0	0	0	0	0	0	0	0	0	670,000	0
Total Monthly Projection	692,874	1,614	0	0	0	0	0	0	0	0	0	0	694,488	0
Cumulative Monthly Projection	692,874	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488	694,488		
Cumulative Costs	12,444	12,444	12,827											98%
Cumulative Costs + Liens	682,444	682,444	682,827											2%

0 FY01 Funding
670,000 Comm. C/O
24,488 Unob C/O
694,488 Total FY01 Funding

ANL - Immobilization



ANL Immobilization Spend Plan

ANL FY01 Spend Plan

5.2.1.1 Technical Project Office

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	66,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	66,000	0
Cumulative Monthly Projection	5,500	11,000	16,500	22,000	27,500	33,000	38,500	44,000	49,500	55,000	60,500	66,000	66,000	0
Cumulative Costs	5,400	11,000	16,800											-1%
Cumulative Costs + Liens	5,400	11,000	16,800											-1%

66,000 FY01 Funding
0 Comm. C/O
0 Unob. C/O
66,000 Total FY01 Funding

5.2.1.2 Quality Assurance

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	10,000	10,000	8,000	20,000	25,000	25,000	25,000	20,000	18,000	17,000	15,000	15,000	208,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	10,000	10,000	8,000	20,000	25,000	25,000	25,000	20,000	18,000	17,000	15,000	15,000	208,000	0
Cumulative Monthly Projection	10,000	20,000	28,000	48,000	73,000	98,000	123,000	143,000	161,000	178,000	193,000	208,000	208,000	0
Cumulative Costs	10,000	19,200	28,100											0%
Cumulative Costs + Liens	10,000	19,200	28,100											0%

208,000 FY01 Funding
0 Comm. C/O
0 Unob. C/O
208,000 Total FY01 Funding

5.2.1 D&T Program Management

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	15,500	15,500	13,500	25,500	30,500	30,500	30,500	25,500	23,500	22,500	20,500	20,500	274,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	15,500	15,500	13,500	25,500	30,500	30,500	30,500	25,500	23,500	22,500	20,500	20,500	274,000	0
Cumulative Monthly Projection	15,500	31,000	44,500	70,000	100,500	131,000	161,500	187,000	210,500	233,000	253,500	274,000	274,000	0
Cumulative Costs	15,400	30,200	44,700											0%
Cumulative Costs + Liens	15,400	30,200	44,700											0%

274,000 FY01 Funding
0 Comm. C/O
0 Unob. C/O
274,000 Total FY01 Funding

5.2.3.1.2 Short-Term Corrosion Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	10,000	15,000	8,000	15,000	15,000	10,000	10,000	10,000	10,000	8,000	7,000	6,000	124,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	10,000	15,000	8,000	15,000	15,000	10,000	10,000	10,000	10,000	8,000	7,000	6,000	124,000	0
Cumulative Monthly Projection	10,000	25,000	33,000	48,000	63,000	73,000	83,000	93,000	103,000	111,000	118,000	124,000	124,000	0
Cumulative Costs	23,200	40,000	57,200											-73%
Cumulative Costs + Liens	23,200	40,000	57,200											-73%

124,000 FY01 Funding
0 Comm. C/O
0 Unob. C/O
124,000 Total FY01 Funding

5.2.3.1.3 Long-Term Corrosion Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	20,000	30,000	20,000	33,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	359,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	17,500	30,000	20,000	33,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	17,500	0
Total Monthly Projection	37,500	60,000	40,000	66,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	376,500	0
Cumulative Monthly Projection	37,500	67,500	87,500	120,500	152,500	184,500	216,500	248,500	280,500	312,500	344,500	376,500	376,500	0
Cumulative Costs	25,700	53,100	84,300											4%
Cumulative Costs + Liens	39,200	62,100	93,300											-7%

359,000 FY01 Funding
17,500 Comm. C/O
0 Unob. C/O
376,500 Total FY01 Funding

5.2.3.1.4 Integrated Corrosion Tests

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	30,000	35,000	25,000	40,000	40,000	40,000	40,000	35,000	35,000	35,000	40,000	35,000	430,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	16,211	33,711	53,000	88,000	87,000	82,000	82,000	77,000	77,000	75,000	79,000	73,000	913,000	0
Total Monthly Projection	46,211	68,711	78,000	128,000	127,000	122,000	122,000	112,000	112,000	110,000	119,000	108,000	1,343,000	0
Cumulative Monthly Projection	46,211	81,211	106,211	146,211	186,211	226,211	266,211	301,211	336,211	371,211	411,211	446,211	446,211	0
Cumulative Costs	28,230	46,964	80,969											24%
Cumulative Costs + Liens	43,216	55,507	89,154											16%

430,000 FY01 Funding
16,211 Comm. C/O
0 Unob. C/O
446,211 Total FY01 Funding

Form Performance Testing and Dissolution Modeling Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	60,000	80,000	53,000	88,000	87,000	82,000	82,000	77,000	77,000	75,000	79,000	73,000	913,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	33,711	80,000	53,000	88,000	87,000	82,000	82,000	77,000	77,000	75,000	79,000	73,000	913,000	0
Total Monthly Projection	93,711	162,711	106,000	176,000	174,000	164,000	164,000	154,000	154,000	150,000	158,000	146,000	1,826,000	0
Cumulative Monthly Projection	93,711	172,711	226,711	314,711	401,711	483,711	565,711	642,711	719,711	794,711	873,711	946,711	946,711	0
Cumulative Costs	77,130	140,064	222,369											2%
Cumulative Costs + Liens	105,616	157,607	239,654											-6%

913,000 FY01 Funding
33,711 Comm. C/O
0 Unob. C/O
946,711 Total FY01 Funding

ANL Immobilization Spend Plan

Form Qualification and Repository

5.2.3.4

Interaction

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	5,000	5,000	5,000	8,000	8,000	8,000	8,000	8,000	8,000	9,000	9,000	9,000	90,000	90,000
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Monthly Projection	5,000	5,000	5,000	8,000	8,000	8,000	8,000	8,000	8,000	9,000	9,000	9,000	90,000	90,000
Cumulative Monthly Projection	5,000	10,000	15,000	23,000	31,000	39,000	47,000	55,000	63,000	72,000	81,000	90,000		22%
Cumulative Costs	4,500	8,500	11,700											22%
Cumulative Costs + Liens	4,500	8,500	11,700											22%

90,000 FY01 Funding
0 Comm C/O
0 Unob C/O
90,000 Total FY01 Funding

5.2.3 Form Qualification D&T Plan

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	65,000	85,000	58,000	96,000	95,000	90,000	90,000	85,000	85,000	84,000	88,000	82,000	1,003,000	1,003,000
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	33,711	0	0	0	0	0	0	0	0	0	0	0	33,711	33,711
Total Monthly Projection	98,711	85,000	58,000	96,000	95,000	90,000	90,000	85,000	85,000	84,000	88,000	82,000	1,036,711	1,036,711
Cumulative Monthly Projection	98,711	183,711	241,711	337,711	432,711	522,711	612,711	697,711	782,711	866,711	954,711	1,036,711		3%
Cumulative Costs	81,630	148,564	234,069											-4%
Cumulative Costs + Liens	110,116	166,107	251,354											-4%

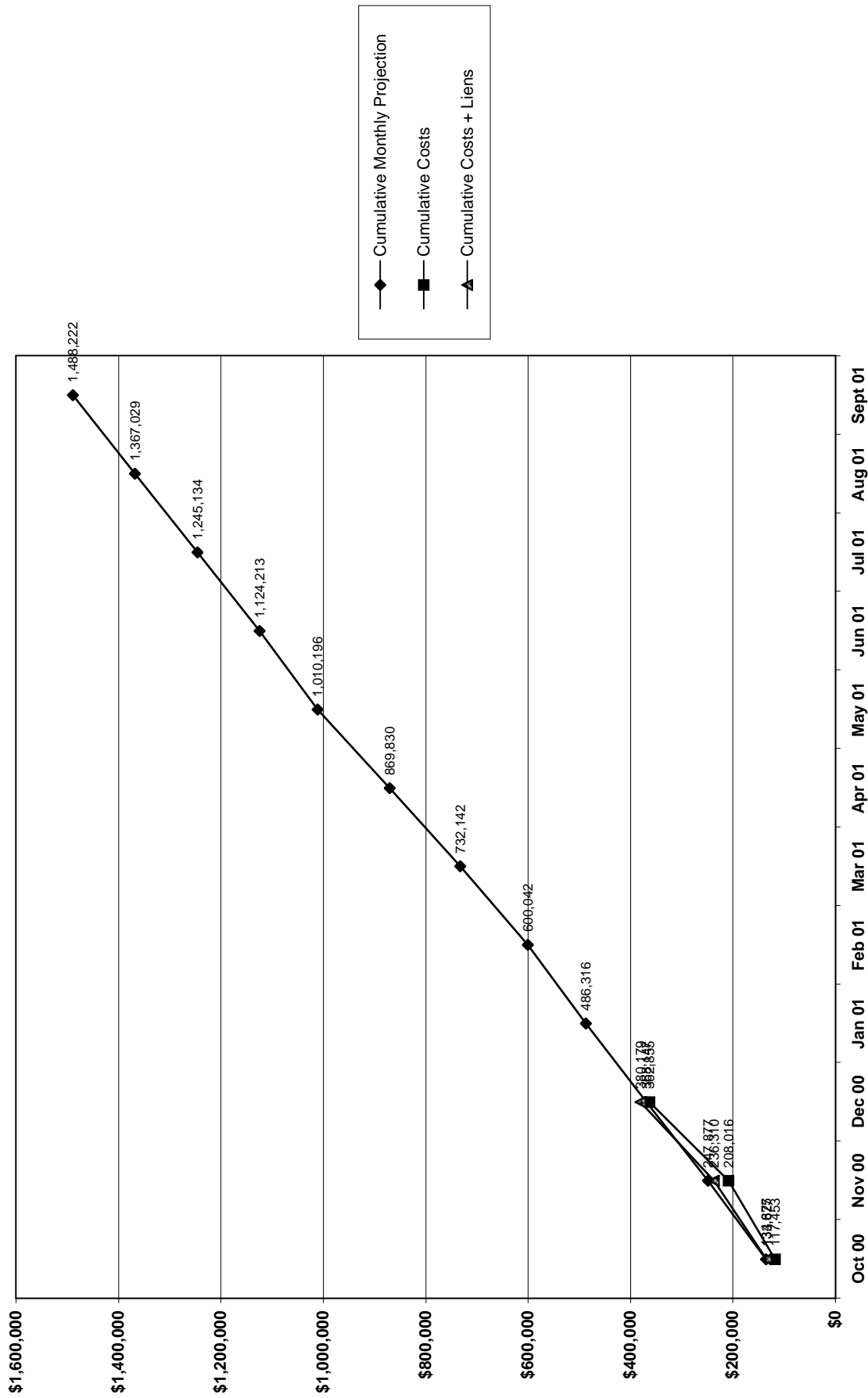
1,003,000 FY01 Funding
33,711 Comm C/O
0 Unob C/O
1,036,711 Total FY01 Funding

ANL Immobilization and Associated Processing Total

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	80,500	100,500	71,500	121,500	125,500	120,500	120,500	110,500	108,500	106,500	108,500	102,500	1,277,000	1,277,000
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	33,711	0	0	0	0	0	0	0	0	0	0	0	33,711	33,711
Total Monthly Projection	114,211	100,500	71,500	121,500	125,500	120,500	120,500	110,500	108,500	106,500	108,500	102,500	1,310,711	1,310,711
Cumulative Monthly Projection	114,211	214,711	286,211	407,711	533,211	653,711	774,211	884,711	993,211	1,099,711	1,208,211	1,310,711		3%
Cumulative Costs	97,030	178,764	278,769											-3%
Cumulative Costs + Liens	125,516	196,307	296,054											-3%

1,277,000 FY01 Funding
33,711 Comm C/O
0 Unob C/O
1,310,711 Total FY01 Funding

PNNL - Immobilization



PNNL FY01 Spend Plan

5.2.1.2	QA	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
	Manpower Projection	14,409	18,994	19,004	17,549	14,423	15,542	15,835	15,542	15,835	22,500	24,187	25,180	219,000	
	Major Procurement Projection														
	FY00 Liens	1,744												1,744	
	Total Monthly Projection	16,153	18,994	19,004	17,549	14,423	15,542	15,835	15,542	15,835	22,500	24,187	25,180	220,744	
															219,000 New FY01 Funds
															1,744 Comm. C/O*
															0 Unob C/O
															220,744 Total FY01 Funding

[illegible]

Radiation-Damaged Sample

[illegible]

5.2.3.1.4 Integrated Corrosion Tests

[illegible]

5.2.3.1.5 Single-Pass Flow-Through Tests

[illegible]

PNNL Immobilization Spend Plan

5.2.3.2.1 Aqueous Solubility/Speciation Measurements

0 New FY01 Funds
0 Comm. C/O*
0 Unob C/O
0 Total FY01 Funding

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection														0
Major Procurement Projection														0
FY00 Liens														0
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Cumulative Costs + Liens	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.3.2.2 Form Performance Testing and Dissolution Modeling

1,080,000 New FY01 Funds
15,478 Comm. C/O*
0 Unob C/O
1,095,478 Total FY01 Funding

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	85,439	81,287	87,495	86,433	86,423	102,002	107,369	109,768	84,350	84,254	83,276	81,904	1,080,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	15,478	0	0	0	0	0	0	0	0	0	0	0	15,478	0
Total Monthly Projection	100,917	81,287	87,495	86,433	86,423	102,002	107,369	109,768	84,350	84,254	83,276	81,904	1,095,478	0
Cumulative Monthly Projection	100,917	182,204	269,699	356,132	442,555	544,557	651,926	761,694	846,044	930,298	1,013,574	1,095,478		-4%
Cumulative Costs	85,439	152,061	279,155											-9%
Cumulative Costs + Liens	100,051	178,595	294,121											

5.2.3.3 Form Qualification and Repository Interactions

90,000 New FY01 Funds
0 Comm. C/O*
0 Unob C/O
90,000 Total FY01 Funding

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	16,902	6,689	6,900	6,231	6,009	6,100	6,890	7,100	6,238	6,435	7,200	7,306	90,000	0
Major Procurement Projection													0	0
FY00 Liens													0	0
Total Monthly Projection	16,902	6,689	6,900	6,231	6,009	6,100	6,890	7,100	6,238	6,435	7,200	7,306	90,000	0
Cumulative Monthly Projection	16,902	23,591	30,491	36,722	42,731	48,831	55,721	62,821	69,059	75,494	82,694	90,000		20%
Cumulative Costs	16,902	21,015	24,401											20%
Cumulative Costs + Liens	16,902	21,015	24,401											20%

5.2.3

D&T Form Qualification Total

1,170,000 New FY01 Funds
15,478 Comm. C/O*
0 Unob C/O
1,185,478 Total FY01 Funding

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	102,341	87,976	94,395	92,664	92,432	108,102	114,259	116,868	90,588	90,689	90,476	89,210	1,170,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	15,478	0	0	0	0	0	0	0	0	0	0	0	15,478	0
Total Monthly Projection	117,819	87,976	94,395	92,664	92,432	108,102	114,259	116,868	90,588	90,689	90,476	89,210	1,185,478	0
Cumulative Monthly Projection	117,819	205,795	300,190	392,854	485,286	593,388	707,647	824,515	915,103	1,005,792	1,096,268	1,185,478		-1%
Cumulative Costs	102,341	173,076	303,556											-6%
Cumulative Costs + Liens	116,953	199,610	318,522											

PNNL Immobilization and Associated Processing Total

1,471,000 FY01 Funding
17,222 Comm. C/O*
0 Unob C/O
1,488,222 Total FY01 Funding

	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.
Manpower Projection	117,453	113,202	120,270	118,169	113,726	132,100	137,688	140,366	114,017	120,921	121,895	121,193	1,471,000	0
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY00 Liens	17,222	0	0	0	0	0	0	0	0	0	0	0	17,222	0
Total Monthly Projection	134,675	113,202	120,270	118,169	113,726	132,100	137,688	140,366	114,017	120,921	121,895	121,193	1,488,222	0
Cumulative Monthly Projection	134,675	247,877	368,147	486,316	600,042	732,142	869,830	1,010,196	1,124,213	1,245,134	1,367,029	1,468,222		1%
Cumulative Costs	117,453	208,016	362,855											-3%
Cumulative Costs + Liens	133,827	236,310	380,179											

1,471,000 FY01 New Funding
17,222 Carryover
1,488,222 Total FY01 Funding