UCRL-ID-134170-00-12
PIP-00-159

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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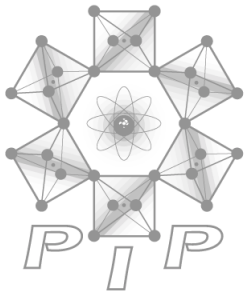


Executive Summary

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.

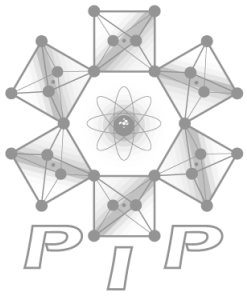
Significant Issues and Risks

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 calibration 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/m^2 for the ^{238}Pu-bearing, phase-pure pyrochlore to 0.6 g/m^2 for the ^{238}Pu zirconolite-rich baseline. During the initial characterization of these specimens 1 year ago, the amounts of Pu released ranged from $1x10^{-5}$ g/m^2 for coarse ^{238}Pu zirconolite to 0.02 g/m^2 for the ^{238}Pu pyrochlore-rich and ^{238}Pu 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 ^{238}Pu-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

Reconnaisance 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

WBS	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		100		Mar-00	**PIP-00-035**
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**

WBS	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. inpurity studies sample fabrications	LLNL& ANSTO		Sep-99	03/15/00	100		2/16/00	**PIP 00-016**
	FY00 Milestones										
3.1	Basic Formulation and Process Parameters2	1	Provide formualtion 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**

WBS	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	LLNL		Jun-99		100		1/19/00	**PIP 00-003**
		f.	Issue interim report on model development for repository license application	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	PNNL		Apr-00	06/30/00	100	5/1/00	6/2/00	**PIP 00-081**
		2	Update SPFT report with results from longer-term testing	LLNL		May-00	02/01/01	99	8/10/00		Manuscript in final review
		3	Document results of short-term testing of the ceramic	ANL		Jun-00	06/30/00	100	5/8/00	6/30/00	**PIP-00-096**
		4	Issue final report on model development for repository PA	LLNL		Jun-00	02/01/01	95			Manuscript in review
		5	Document results of long-term testing of the ceramic	ANL		Aug-00	09/29/00	100	8/16/00	Sep-00	**PIP 00-120LTR 11/11/00**
		6	Issue report on status of drip tests and VHT interaction tests	ANL		Aug-00	08/15/00	100	7/26/00	9/15/00	**PIP 00-109LTR**
		7	Letter report on status of 238PU radiation damage effects	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	LLNL		Aug-00	10/15/00	100	10/30/00	11/22/00	**PIP-00-148**
		3	Issue final report on Hf solubility and speciation	PNNL		Aug-00	08/10/00	100	8/20/00	9/15/00	**PIP 00-108**
		4	Issue report on Pu and Gd sorption on colloids	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	WSRC		Sep-00	10/20/00	100	11/21/00	11/21/00	**PIP-00-149**
		2	Issue integrated data report for repository licensing application	LLNL		Aug-00	10/31/00	100	1/31/01	1/25/01	**PIP-01-004**

WBS	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		1/11/00	**PIP 99-177**
5.8	Materials Characterization	a.	Initiate design of prototype materials characterization system	LLNL& 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**
		2	Initiate test of key system components	WSRC		Jul-00		100		10/11/00	**PIP 00-123LTR**
5.3	Material Size Reduction	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**
		2	Provide draft preliminary SDD	LLNL		Apr-00	06/30/00	100			**PIP-00-042 LTR 8/30/00**
		3	Produce oxide powder for PuCTF	LLNL		Sep-00	N/A	N/A	N/A	N/A	*Task was never started because task was cancelled*
5.4	Material Unpackaging and Sorting	1	Draft preliminary SDD	WSRC		Apr-00	07/28/00	100	May-00		**PIP-00-043 LTR 8/30/00**
		2	Complete testing of opening equipment	WSRC		Sep-00	09/30/00	80		9/19/00	**PIP 00-118LTR 10/11/2000**
5.5	Metal Fuel Feed Preparation	1	Complete integrated system prototype assembly	LLNL		Dec-99	07/28/00	95	2/11/00		**Work stopped and was documented in SDD. See**
		2	Provide draft preliminary SDD	LLNL		Apr-00	07/28/00	95	2/11/00	10/3/00	**PIP-00-021**
		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**
		3	Perform feasibility demonstration	LLNL		Sep-00	30-May				*Milestone moved into FY01 AOP*
5.8	Materials Characterization	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**
		3	Instrumentation installation complete	LLNL		Jun-00	06/30/01				*Milestone moved into FY01 AOP*
5.9	Material Control and Accountability	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**

WBS	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 surrogatesin 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 10/11/00**
6.3	Puck NDE for Process Control	1	XRD NDE plant design spcifications	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 11/8/00**
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-CanisterDesign 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 9/7/00**
		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 9/7/00**
		2	Complete Phase 1 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**

WBS	Task		Milestones	Resp. Site		Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
9.0	***National Environment Policy Act Support***										
10.	***DOCDR***										
10.0	DOCDR		b. Provide supplemental A/E procurement data	LLNL		Mar-99	07/01/00	100		9/29/00	**PIP 00-113LTR**
		1	Draft DOCDR revision for MD review	LLNL		Mar-00	03/07/00	100			**UCRL-ID-131617 Rev 2**
	[redacted]										

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 DOCDR, 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	Update D&T Plan	LLNL		Jun-01					
		2.1.1/FY01/b	Update PMP FY01	LLNL		Sep-01					
2.1.2	Quality Assurance	2.1.2/FY01/a	D&T QA program qualified	LLNL		Nov-00	Dec-00	100		8-Dec	**PIP-00-153LTR**
		2.1.2/FY01/b	TPO completes Management Assessment Report	LLNL		Sep-01	Sep-01	0			Scheduled for Aug-01
		2.1.2/FY01/c	TPO completes annual audit	LLNL		Sep-01	Sep-01	25			
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 .
		2.2.1.3/FY01/b	Provide FDD to DOE	LLNL		Jun-01					
		2.2.1.3/FY01/c	Provide integration SDDs to DOE	LLNL		Jun-01					
2.2.1.4	Material Transport System	2.2.1.4/FY01/a	Provide draft (Material Transport) SDD	WSRC		Dec-00	Jan-01	99			Draft completed.
		2.2.1.4/FY01/b	Provide (Material Transport) SDD	WSRC		Jun-01	Jun-01	0			
2.2.1.5	Waste Handling System	2.2.1.5/FY01/a	Complete Waste Generation Report	WSRC		Dec-00	Feb-01	50			Delayed to complete 13MT SDD
		2.2.1.5/FY01/b	Provide (Waste Handling) SDD	WSRC		Jun-01	Jun-01	0			
2.2.2	***Immobilized Form Development***										
2.2.2.3	Process Control Model Development	2.2.2.3/FY01/a	Provide preliminary PCM and summary of testing	LLNL		Mar-01	Mar-01	55			
2.2.3	***Plutonium Conversion Process and Equipment Development***										
2.2.3.1	Material Receipt and Storage	2.2.3.1/FY01/a	Provide draft SDD	WSRC		Dec-00	Jan-01	99			Draft completed.
		2.2.3.1/FY01/b	Provide SDD	WSRC		Jun-01	Jun-01	0			
2.2.3.3	Material Size Reduction	2.2.3.3/FY01/a	Provide draft SDD	LLNL		Dec-00	Feb-01	50			WSRC developing SDD. Limited resources will delay.
		2.2.3.3/FY01/b	Provide SDD	LLNL		Jun-01					
		2.2.3.3/FY01/c	Produce oxide powder for PuCTF	LLNL		Sep-01					

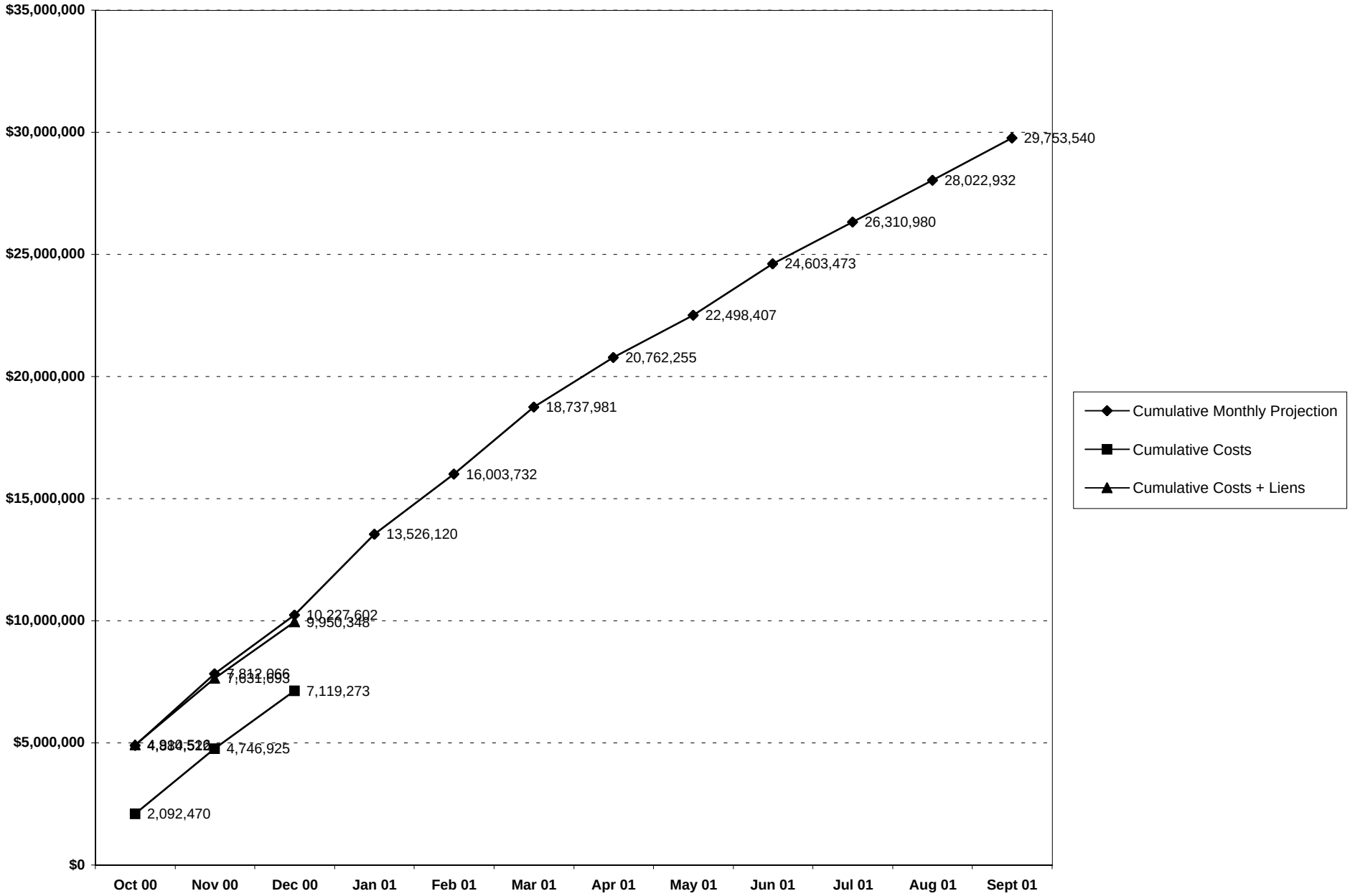
WBS	Task	DOE/MD Milestone #	Milestones	Resp. Site		Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
2.2.3.4	Material Unpackaging and Sorting	2.2.3.4/FY01/a	Provide draft SDD	WSRC		Dec-00	Jan-01	95			Draft completed.
		2.2.3.4/FY01/b	Complete concept for material transfer	WSRC		Mar-01	Sep-01	0			Delayed due to budget cut.
		2.2.3.4/FY01/c	Provide SDD	WSRC		Jun-01	Mar-01	0			Postponed due to budget cut.
2.2.3.6	Metal Conversion	2.2.3.6/FY01/a	Move system into RMMA	LLNL		Oct-00	12/30/00	100		29-Dec	**PIP-00-152**
		2.2.3.6/FY01/b	Provide draft SDD	LLNL		Dec-00	28-Feb	85			Preliminary draft in preparation
		2.2.3.6/FY01/c	Initiate hot tests	LLNL		Jun-01	14-Jun				Hardware is in Pu building. Cold activation is underway
		2.2.3.6/FY01/d	Complete initial hot tests	LLNL		Jul-01	7/31/01				
		2.2.3.6/FY01/e	Provide SDD	LLNL		Jun-01					
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 difficulities 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	Provide draft SDD	WSRC		Dec-00	Jan-01	99			Draft completed.
		2.2.3.10/FY01/b	Provide SDD	WSRC		Jun-01	Jun-01	0			
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	Provide draft blending SDD	WSRC		Dec-00	Jan-01	95			Draft completed.
		2.2.4.1/FY01/b	Complete blender test at vendor	WSRC		Mar-01	Mar-02	10			Postponed due to budget cut.
		2.2.4.1/FY01/c	Provide blending SDD	WSRC		Jun-01	Mar-02	0			Postponed due to budget cut.
2.2.4.2.1	Ceramic Process Development	2.2.4.2.1/FY01/a	Provide draft SDD for ceramification system	LLNL		Dec-00	28-Feb-01	80			In progress.
		2.2.4.2.1/FY01/b	Provide SDD, Rev. 0	LLNL		Jul-01					Deferred to FY 02.
2.2.4.2.2	Plutonium Ceramic Test Facility (PuCTF)	2.2.4.2.2/FY01/a	PuCTF installation complete in LLNL Pu facility	LLNL		Feb-01	28-Feb-01	50			Installation started.
		2.2.4.2.2/FY01/b	PuCTF operational with plutonium	LLNL		Jun-01	22-Aug-01	0			Dependent on installation completion and ORR approval by LLNL and/or DOE
		2.2.4.2.2/FY01/c	PuCTF operation validated with plutonium	LLNL		Sep-01	2-Oct-01	0			
2.2.4.2.3	Ceramification Prototype Test Facility (CPTF)	2.2.4.2.3/FY01/a	CPTF design completed	WSRC		Dec-00	01/15/00	99%			Report completed and sent to TPO for formal issue to DOE-MD.
		2.2.4.2.3/FY01/b	Provide input for Ceramification SDD	WSRC		Apr-01	04/30/02	20%			Postponed due to budget cut
		2.2.4.2.3/FY01/c	Large furnace, press and mill installed and tested	WSRC		Jun-01	6/30/01	40%			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	WSRC NDE XRD plant prototype test system installed	WSRC		Jan-01	01/31/01	80			XRD unit received and moved into laboratory in SRTC. May be problem with instrument alignment that will delay operation.
		2.2.4.3/FY01/b	PuCTF NDE System installed in LLNL Pu facility	LLNL		Mar-01		30			Deferred to FY02.

WBS	Task	DOE/MD Milestone #	Milestones	Resp. Site		Due Date	Anticipated Comp Date	% Comp	Draft Report Complete	Final Report Complete	Status/ Comments
		2.2.4.3/FY01/c	Provide input to Analytical SDD	LLNL & WSRC		Apr-01					Deferred to FY02.
		2.2.4.3/FY01/d	PuCTF NDE Gamma spec validation with Pu	LLNL		Sep-01					
		2.2.4.3/FY01/e	WSRC NDE XRD testing complete	WSRC		Sep-01	09/30/01	10			XRD testing with existing XRD units underway will commence with prototype unit after installation is completed.
2.2.4.5	Can Loading	2.2.4.5/FY01/a	Provide draft SDD	WSRC		Dec-00	Jan-01	90			Incorporating comments.
		2.2.4.5/FY01/b	Provide SDD	WSRC		Jun-01	Mar-02	0			Postponed due to budget cut.
		2.2.4.5/FY01/c	Complete demonstration of mockup can loading system	WSRC		Jul-01	Jun-02	0			Postponed due to budget cut.
2.2.4.6	Can MC&A	2.2.4.6/FY01/a	Can MC&A test system procured	WSRC		Jan-01	Jan-01	95			Procurement complete.
		2.2.4.6/FY01/b	Can MC&A initial system testing (complete)	WSRC		Apr-01	Apr-01	40			Testing underway.
		2.2.4.6/FY01/c	Provide input to crosscutting MC&A SDD	WSRC		Apr-01	Apr-02	0			Postponed due to budget cut.
2.2.5	***Second-Stage Immobilization Process and Equipment Development***										
2.2.5.1.1	Can-in-Canister Design and Assembly	2.2.5.1.1/FY01/a	Provide draft SDD	WSRC		Dec-00	Jan-01	99			Draft complete
		2.2.5.1.1/FY01/b	Provide SDD	WSRC		Jun-01	Apr-02	0			Postponed due to budget cut.
2.2.5.1.2	Canister Pour Analysis and Testing	2.2.5.1.2/FY01/a	Complete ProCAST model report	LLNL		Mar-01					
		2.2.5.1.2/FY01/b	Complete Phase 2 cold pour test report	WSRC		Nov-00	11/30/00	100		11/30/00	**PIP-00-134**
2.2.5.1.3	Can/Magazine Storage Vault	2.2.5.1.3/FY01/a	Provide input to CIC system SDD	WSRC		Apr-01	Apr-01	99			CIC draft SDD completed.
2.3 D&T Plan for Form Qualification											
2.3.1	Form Performance Testing and Dissolution Modeling	2.3.1.1/FY01/a	Issue a letter report on the results from the characterization and testing of the radiation damage specimens.	PNNL		Aug-01	Aug-01	20			Experiments in progress
		2.3.1.2/FY01/a	Document results of TCLP tests	ANL		Jan-01	03/31/01	10			Task plan complete, initial management review of safety review completed. Task delayed due to delay in getting safety approval for tests.
		2.3.1.2/FY01/b	Document results of short-term testing of the ceramic	ANL		Jun-01	Jun-01	15			Solution data for baseline ceramic received
		2.3.1.3/FY01/a	Document results of long-term testing of ceramic	ANL		Sep-01	Sep-01	10			Experiments in progress
		2.3.1.4/FY01/a	Issue preliminary report on PUF results from pyrochlore baseline ceramic	PNNL		Jun-01	Jun-01	15			Initiation of experiments delayed
		2.3.1.4/FY01/b	Issue report on status of drip tests	ANL		Aug-01	Aug-01	12			Experiments in progress
		2.3.1.5/FY01/a	Update the repository data package with results from the SPFT on radiation damage specimens and LLNL tests.	LLNL & PNNL		May-01	May-01	0			
		2.3.1.6/FY01/a	Issue report updating the ceramic dissolution model	LLNL		Sep-01	Sep-01	0			
2.3.4	Form Qualification and Repository Interactions	2.3.4/FY01/a	Issue Rev. 0 of the PICP	WSRC		May-01	05/31/01	20%			PICP draft completed and issued to DOE-MD. Will be reviewed and updated.
		2.3.4/FY01/b	Issue update to integrated data report	LLNL		Sep-01	Sep-01	0			
3 D&T Plan for Technology Transfer											

WBS	Task	DOE/MD Milestone #	Milestones	Resp. Site		Due Date	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

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.**	
	LLNL, WSRC - Al DiSabatino															
	Manpower Projection	15,000	15,000	0	0	0	0	0	0	0	0	0	0	**30,000**		30,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		271,970 Comm. C/O
	FY00 Liens	271,970	0	0	0	0	0	0	0	0	0	0	0	**271,970**		0 Uncommitted C/O
	Total Monthly Projection	286,970	15,000	0	0	0	0	0	0	0	0	0	0	**301,970**		301,970 Total FY01 Funding
	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			
	Cumulative Costs	109,515	150,110	240,181											20%	
	Cumulative Costs + Liens	285,711	246,732	339,997											-13%	

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.**	
	LLNL, WSRC, ANL, PNNL															
	Manpower Projection	91,203	310,732	134,371	148,456	147,371	178,956	158,094	158,456	163,094	183,232	162,732	181,303	**2,018,000**		2,018,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		116,572 Comm. C/O
	FY00 Liens	116,572	0	0	0	0	0	0	0	0	0	0	0	**116,572**		0 Uncommitted C/O
	Total Monthly Projection	207,775	310,732	134,371	148,456	147,371	178,956	158,094	158,456	163,094	183,232	162,732	181,303	**2,134,572**		2,134,572 Total FY01 Funding
	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	1,953,269	2,134,572			
	Cumulative Costs	89,019	223,915	338,282											48%	
	Cumulative Costs + Liens	205,591	495,169	609,572											7%	

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.**	
	LLNL, 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**		1,100,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		78,529 Comm. C/O
	FY00 Liens	78,529	0	0	0	0	0	0	0	0	0	0	0	**78,529**		0 Uncommitted C/O
	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**		1,178,529 Total FY01 Funding
	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			
	Cumulative Costs	112,909	187,178	258,854											61%	
	Cumulative Costs + Liens	624,545	670,459	707,049											-6%	

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.**	
	LLNL, 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**		320,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		164,500 Comm. C/O
	FY00 Liens	164,500	0	0	0	0	0	0	0	0	0	0	0	**164,500**		0 Uncommitted C/O
	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**		484,500 Total FY01 Funding
	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			
	Cumulative Costs	11,861	44,945	49,605											79%	
	Cumulative Costs + Liens	176,174	190,086	197,343											16%	

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.**	
	LLNL															
	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**		3,100,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		3,100,000 Total FY01 Funding
	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			
	Cumulative Costs	0	527,625	498,851											36%	
	Cumulative Costs + Liens	0	527,625	498,851											36%	

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	507,352	525,536	**6,538,000**		6,538,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		359,601 Comm. C/O
	FY00 Liens	359,601	0	0	0	0	0	0	0	0	0	0	0	**359,601**		0 Uncommitted C/O
	Total Monthly Projection	967,293	900,492	460,908	485,838	492,527	527,531	502,262	500,431	501,662	525,765	507,352	525,536	**6,897,601**		6,897,601 Total FY01 Funding
	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			
	Cumulative Costs	213,789	983,663	1,145,591											51%	
	Cumulative Costs + Liens	1,006,310	1,883,340	2,012,815											14%	

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**	**Sept 01**	**Totals**	**Cum. Var.**	
	LLNL, 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**		285,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		1,045 Comm. C/O
	FY00 Liens	1,045	0	0	0	0	0	0	0	0	0	0	0	**1,045**		0 Uncommitted C/O
	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**		286,045 Total FY01 Funding
	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			
	Cumulative Costs	37,240	83,280	101,238											-2%	
	Cumulative Costs + Liens	38,285	84,325	102,283											-3%	

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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.**	
	LLNL, 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**		200,000 New FY01 Funds
	Major Procurement Projection	0	0	0	120,000	0	0	0	0	0	0	0	0	**120,000**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		200,000 Total FY01 Funding
	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											100%	
	Cumulative Costs + Liens	0	0	0											100%	

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**	**Sept 01**	**Totals**	**Cum. Var.**	
	LLNL, 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**		1,010,000 New FY01 Funds
	Major Procurement Projection	0	0	0	100,000	0	0	0	0	0	0	0	0	**100,000**		2,861 Comm. C/O
	FY00 Liens	2,861	0	0	0	0	0	0	0	0	0	0	0	**2,861**		0 Uncommitted C/O
	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**		1,012,861 Total FY01 Funding
	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			
	Cumulative Costs	133,632	242,079	339,967											11%	
	Cumulative Costs + Liens	136,493	244,940	343,648											10%	

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**		60,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		60,000 Total FY01 Funding
	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			
	Cumulative Costs	0	1,597	6,077											-1%	
	Cumulative Costs + Liens	0	1,597	6,077											-1%	

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**		110,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		110,000 Total FY01 Funding
	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			
	Cumulative Costs	5,399	6,134	10,636											24%	
	Cumulative Costs + Liens	5,399	6,134	10,636											24%	

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 - Al DiSabatino															
	Manpower Projection	176,011	167,109	165,880	137,500	148,500	159,000	113,300	82,300	82,300	80,300	66,300	66,500	**1,445,000**		1,665,000 New FY01 Funds
	Major Procurement Projection	0	0	0	220,000	0	0	0	0	0	0	0	0	**220,000**		3,906 Comm. C/O
	FY00 Liens	3,906	0	0	0	0	0	0	0	0	0	0	0	**3,906**		0 Uncommitted C/O
	Total Monthly Projection	179,917	167,109	165,880	357,500	148,500	159,000	113,300	82,300	82,300	80,300	66,300	66,500	**1,668,906**		1,668,906 Total FY01 Funding
	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			
	Cumulative Costs	176,271	333,090	457,918											11%	
	Cumulative Costs + Liens	180,177	336,996	462,643											10%	

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.**	
	LLNL, 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**		584,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		91,708 Comm. C/O
	FY00 Liens	91,708	0	0	0	0	0	0	0	0	0	0	0	**91,708**		0 Uncommitted C/O
	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**		675,708 Total FY01 Funding
	Cumulative Monthly Projection	205,408	302,508	372,808	443,108	520,208	592,008	602,308	618,508	632,208	643,208	659,408	675,708			
	Cumulative Costs	100,636	175,487	309,944											17%	
	Cumulative Costs + Liens	203,343	275,859	359,652											4%	

5.2.2.2	**Immobilized Form 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 - 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**		584,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		91,708 Comm. C/O
	FY00 Liens	91,708	0	0	0	0	0	0	0	0	0	0	0	**91,708**		0 Uncommitted C/O
	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**		675,708 Total FY01 Funding
	Cumulative Monthly Projection	205,408	197,736	268,036	338,336	415,436	487,236	497,536	513,736	527,436	538,436	554,636	570,936			
	Cumulative Costs	100,636	175,487	309,944											-16%	
	Cumulative Costs + Liens	100,636	175,487	359,652											-34%	

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5.2.2.3.1	**Material Receipt and Storage**	**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	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	**55,000**		55,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		55,000 Total FY01 Funding
	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%	

5.2.2.3.3	**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**	**Sept 01**	**Totals**	**Cum. Var.**	
	LLNL, WSRC															
	Manpower Projection	0	0	7,500	7,500	7,500	7,500	0	0	0	0	0	0	**30,000**		30,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	Total Monthly Projection	0	0	7,500	7,500	7,500	7,500	0	0	0	0	0	0	**30,000**		30,000 Total FY01 Funding
	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	-2,270	-2,270	-2,270											130%	
	Cumulative Costs + Liens	-2,270	-2,270	-2,270											130%	

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**	**Sept 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**		125,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		125,000 Total FY01 Funding
	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	9,830	16,245	23,034											15%	
	Cumulative Costs + Liens	9,830	16,245	23,034											15%	

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**	**Sept 01**	**Totals**	**Cum. Var.**	
	Manpower Projection	160,000	240,000	160,000	450,000	220,000	210,000	151,000	0	0	0	0	0	**1,591,000**		1,591,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		18,204 Comm. C/O
	FY00 Liens	18,204	0	0	0	0	0	0	0	0	0	0	0	**18,204**		0 Uncommitted C/O
	Total Monthly Projection	178,204	240,000	160,000	450,000	220,000	210,000	151,000	0	0	0	0	0	**1,609,204**		1,609,204 Total FY01 Funding
	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			
	Cumulative Costs	137,187	461,164	800,732											-38%	
	Cumulative Costs + Liens	168,972	491,739	1,109,298											-92%	

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**	**Sept 01**	**Totals**	**Cum. Var.**	
	Manpower Projection	25,000	45,000	45,000	85,000	35,000	50,000	20,000	30,000	30,000	20,000	20,000	15,000	**420,000**		420,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	Total Monthly Projection	25,000	45,000	45,000	85,000	35,000	50,000	20,000	30,000	30,000	20,000	20,000	15,000	**420,000**		420,000 Total FY01 Funding
	Cumulative Monthly Projection	25,000	70,000	115,000	200,000	235,000	285,000	305,000	335,000	365,000	385,000	405,000	420,000			
	Cumulative Costs	24,078	49,606	111,596											3%	
	Cumulative Costs + Liens	24,078	49,606	111,596											3%	

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**	**Sept 01**	**Totals**	**Cum. Var.**	
	LLNL, WSRC															
	Manpower Projection	51,200	71,100	67,100	62,100	60,100	47,100	40,800	46,100	44,200	41,700	45,000	63,500	**640,000**		640,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		20,905 Comm. C/O
	FY00 Liens	20,905	0	0	0	0	0	0	0	0	0	0	0	**20,905**		0 Uncommitted C/O
	Total Monthly Projection	72,105	71,100	67,100	62,100	60,100	47,100	40,800	46,100	44,200	41,700	45,000	63,500	**660,905**		660,905 Total FY01 Funding
	Cumulative Monthly Projection	72,105	143,205	210,305	272,405	332,505	379,605	420,405	466,505	510,705	552,405	597,405	660,905			
	Cumulative Costs	50,500	133,018	227,582											-8%	
	Cumulative Costs + Liens	72,005	153,923	228,316											-9%	

5.2.2.3.9	**Material Control and Accountability**	**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	5,000	5,000	6,000	6,000	0	0	0	0	0	**22,000**		22,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	Total Monthly Projection	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	0	**22,000**		22,000 Total FY01 Funding
	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!	

5.2.2.3.10	**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**	**Sept 01**	**Totals**	**Cum. Var.**	
	WSRC															
	Manpower Projection	0	0	0	5,000	5,000	5,000	5,000	0	0	0	0	0	**20,000**		20,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	Total Monthly Projection	0	0	0	5,000	5,000	5,000	5,000	0	0	0	0	0	**20,000**		20,000 Total FY01 Funding
	Cumulative Monthly Projection	0	0	0	5,000	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000			
	Cumulative Costs	0	0	0											#DIV/0!	
	Cumulative Costs + Liens	0	0	0											#DIV/0!	

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5.2.2.3	**Plutonium Conversion 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 - Mark Bronson															
	Manpower Projection	246,200	368,700	294,200	634,200	353,200	346,600	237,400	88,700	88,800	74,300	79,600	91,100	**2,903,000**		2,903,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		39,109 Comm. C/O
	FY00 Liens	39,109	0	0	0	0	0	0	0	0	0	0	0	**39,109**		0 Uncommitted C/O
	Total Monthly Projection	285,309	368,700	294,200	634,200	353,200	346,600	237,400	88,700	88,800	74,300	79,600	91,100	**2,942,109**		2,942,109 Total FY01 Funding
	Cumulative Monthly Projection	285,309	654,009	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			
	Cumulative Costs	219,326	660,464	1,170,740											-23%	
	Cumulative Costs + Liens	272,615	711,944	1,480,041											-56%	

5.2.2.4.1	**Ceramic Feed Batching**	**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 - Lead - Kent Sullivan															
	Manpower 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**		470,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		470,000 Total FY01 Funding
	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			
	Cumulative Costs	12,797	29,551	47,574											48%	
	Cumulative Costs + Liens	12,797	29,551	47,574											48%	

5.2.2.4.2.1	**Ceramification Process 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.**	
	LLNL, WSRC															
	Manpower Projection	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**		437,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	5,000	5,000	5,000	4,000	4,000	4,000	4,000	4,000	**35,000**		60,073 Comm. C/O
	FY00 Liens	60,073	0	0	0	0	0	0	0	0	0	0	0	**60,073**		0 Uncommitted C/O
	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**		497,073 Total FY01 Funding
	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			
	Cumulative Costs	3,418	12,292	106,838											-51%	
	Cumulative Costs + Liens	63,492	72,365	106,911											-51%	

5.2.2.4.2.3	**Ceramification Prototype 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.**	
	WSRC, Clemson															
	Manpower Projection	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**		5,115,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		1,127,300 Comm. C/O
	FY00 Liens	1,127,300	0	0	0	0	0	0	0	0	0	0	0	**1,127,300**		24,488 Uncommitted C/O
	Total Monthly Projection	1,431,674	322,314	400,400	678,000	297,100	470,800	302,800	338,300	761,300	429,400	439,700	395,000	**6,266,788**		6,266,788 Total FY01 Funding
	Cumulative Monthly Projection	1,431,674	1,753,988	2,154,388	2,832,388	3,129,488	3,600,288	3,903,088	4,241,388	5,002,688	5,432,088	5,871,788	6,266,788			
	Cumulative Costs	276,359	534,885	764,212											65%	
	Cumulative Costs + Liens	1,403,659	1,651,432	1,863,302											14%	

5.2.2.4.2.2	**Plutonium Ceramic Test Facility (PuCTF)**	**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.**	
	LLNL, WSRC															
	Manpower Projection	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**		3,935,000 New FY01 Funds
	Major Procurement Projection	30,000	30,000	30,000	20,000	0	0	0	0	0	0	0	0	**110,000**		140,677 Comm. C/O
	FY00 Liens	140,678	0	0	0	0	0	0	0	0	0	0	0	**140,678**		0 Uncommitted C/O
	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**		4,075,677 Total FY01 Funding
	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			
	Cumulative Costs	609,415	1,182,405	1,841,241											11%	
	Cumulative Costs + Liens	780,352	1,392,052	1,933,714											6%	

5.2.2.4.3	**Puck NDE/MC&A for Process 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**	**Sept 01**	**Totals**	**Cum. Var.**	
	LLNL, WSRC															
	Manpower Projection	5,500	25,100	48,900	41,200	111,900	153,300	179,800	197,500	180,400	143,000	135,900	124,500	**1,347,000**		1,373,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	10,000	10,000	6,000	0	0	0	**26,000**		245,700 Comm. C/O
	FY00 Liens	245,700	0	0	0	0	0	0	0	0	0	0	0	**245,700**		0 Uncommitted C/O
	Total Monthly Projection	251,200	25,100	48,900	41,200	111,900	153,300	189,800	207,500	186,400	143,000	135,900	124,500	**1,618,700**		1,618,700 Total FY01 Funding
	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	1,494,200	1,618,700			
	Cumulative Costs	5,359	22,836	40,919											87%	
	Cumulative Costs + Liens	251,059	268,536	286,619											12%	

5.2.2.4.4	**Recycle of Unacceptable Materials**	**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.**	
	LLNL, WSRC															
	Manpower Projection	0	0	0	0	0	5,000	10,000	12,000	0	0	0	0	**27,000**		27,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	Total Monthly Projection	0	0	0	0	0	5,000	10,000	12,000	0	0	0	0	**27,000**		27,000 Total FY01 Funding
	Cumulative Monthly Projection	0	0	0	0	0	5,000	15,000	27,000	27,000	27,000	27,000	27,000			
	Cumulative Costs	32	65	65											#DIV/0!	
	Cumulative Costs + Liens	32	65	65											#DIV/0!	

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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**		382,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		382,000 Total FY01 Funding
	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%	

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	**109,000**		109,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		109,000 Total FY01 Funding
	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%	

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 - Guy Armantrout															
	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**		11,848,000 New FY01 Funds
	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**		1,573,750 Comm. C/O
	FY00 Liens	1,573,751	0	0	0	0	0	0	0	0	0	0	0	**1,573,751**		24,488 Uncommitted C/O
	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**		13,446,238 Total FY01 Funding
	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			
	Cumulative Costs	952,456	1,863,963	2,905,769											40%	
	Cumulative Costs + Liens	2,556,467	3,495,930	4,343,106											10%	

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**		200,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		200,000 Total FY01 Funding
	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			
	Cumulative Costs	26,482	42,803	58,784											-1%	
	Cumulative Costs + Liens	26,482	48,152	62,782											-8%	

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**	**Sept 01**	**Totals**	**Cum. Var.**	
	LLNL, WSRC, PNNL															
	Manpower Projection	26,800	26,800	31,400	19,900	12,400	12,400	9,000	5,300	3,000	3,000	0	0	**150,000**		150,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		43,779 Comm. C/O
	FY00 Liens	43,779	0	0	0	0	0	0	0	0	0	0	0	**43,779**		0 Uncommitted C/O
	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	**193,779**		193,779 Total FY01 Funding
	Cumulative Monthly Projection	70,579	97,379	128,779	148,679	161,079	173,479	182,479	187,779	190,779	193,779	193,779	193,779			
	Cumulative Costs	25,561	42,200	48,294											62%	
	Cumulative Costs + Liens	67,839	93,479	74,970											42%	

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**		55,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	Total Monthly Projection	0	0	0	0	0	7,000	8,000	8,000	8,000	8,000	8,000	8,000	**55,000**		55,000 Total FY01 Funding
	Cumulative Monthly Projection	0	0	0	0	0	7,000	15,000	23,000	31,000	39,000	47,000	55,000			
	Cumulative Costs	0	613	613											#DIV/0!	
	Cumulative Costs + Liens	0	613	613											#DIV/0!	

5.2.2.5	**Second Stage Immobilization Process/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 - Tehmau Kan															
	Manpower Projection	52,800	42,800	47,400	35,900	28,400	35,400	33,000	29,300	27,000	27,000	24,000	22,000	**405,000**		405,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		43,779 Comm. C/O
	FY00 Liens	43,779	0	0	0	0	0	0	0	0	0	0	0	**43,779**		0 Uncommitted C/O
	Total Monthly Projection	96,579	42,800	47,400	35,900	28,400	35,400	33,000	29,300	27,000	27,000	24,000	22,000	**448,779**		448,779 Total FY01 Funding
	Cumulative Monthly Projection	96,579	139,379	186,779	222,679	251,079	286,479	319,479	348,779	375,779	402,779	426,779	448,779			
	Cumulative Costs	52,043	85,616	107,691											42%	
	Cumulative Costs + Liens	94,321	90,201	138,365											26%	

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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	**593,000**		593,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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	**593,000**		593,000 Total FY01 Funding
	Cumulative Monthly Projection	33,212	71,728	113,752	158,532	210,553	270,387	334,600	399,751	451,961	500,439	547,792	593,000			
	Cumulative Costs	33,212	66,671	125,729											-11%	
	Cumulative Costs + Liens	33,212	66,671	126,888											-12%	
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**		124,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		124,000 Total FY01 Funding
	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			
	Cumulative Costs	23,200	40,000	57,200											-73%	
	Cumulative Costs + Liens	23,200	40,000	57,200											-73%	
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	**359,000**		359,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		17,500 Comm. C/O
	FY00 Liens	17,500	0	0	0	0	0	0	0	0	0	0	0	**17,500**		0 Uncommitted C/O
	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**		376,500 Total FY01 Funding
	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			
	Cumulative Costs	25,700	53,100	84,300											4%	
	Cumulative Costs + Liens	39,200	62,100	93,300											-7%	
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**		478,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		16,211 Comm. C/O
	FY00 Liens	16,211	0	0	0	0	0	0	0	0	0	0	0	**16,211**		0 Uncommitted C/O
	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**		494,211 Total FY01 Funding
	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			
	Cumulative Costs	38,313	69,973	116,846											16%	
	Cumulative Costs + Liens	53,299	81,140	127,755											8%	
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.**	
	LLNL, PNNL															
	Manpower Projection	63,682	52,559	56,559	60,564	54,840	68,040	63,692	65,227	58,137	56,417	56,559	62,720	**719,000**		719,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		15,478 Comm. C/O
	FY00 Liens	15,478	0	0	0	0	0	0	0	0	0	0	0	**15,478**		0 Uncommitted C/O
	Total Monthly Projection	79,160	52,559	56,559	60,564	54,840	68,040	63,692	65,227	58,137	56,417	56,559	62,720	**734,478**		734,478 Total FY01 Funding
	Cumulative Monthly Projection	79,160	131,720	188,279	248,843	303,684	371,724	435,416	500,644	558,781	615,198	671,758	734,478			
	Cumulative Costs	63,485	109,312	189,264											-1%	
	Cumulative Costs + Liens	78,097	133,222	200,447											-6%	
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.**	
	LLNL, 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**		120,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		120,000 Total FY01 Funding
	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			
	Cumulative Costs	6,660	18,366	28,236											-2%	
	Cumulative Costs + Liens	6,660	18,366	28,236											-2%	
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.**	
	LLNL, PNNL															
	Manpower Projection	176,208	192,056	171,264	212,895	204,192	222,464	220,138	217,537	199,812	190,023	193,045	193,366	**2,393,000**		2,393,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		49,189 Comm. C/O
	FY00 Liens	49,189	0	0	0	0	0	0	0	0	0	0	0	**49,189**		0 Uncommitted C/O
	Total Monthly Projection	225,397	192,056	171,264	212,895	204,192	222,464	220,138	217,537	199,812	190,023	193,045	193,366	**2,442,189**		2,442,189 Total FY01 Funding
	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			
	Cumulative Costs	190,570	357,421	601,575											-2%	
	Cumulative Costs + Liens	233,668	401,498	633,826											-8%	
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.**	
	LLNL, WSRC, ANL, PNNL															
	Manpower Projection	52,285	51,972	48,483	49,785	54,292	61,654	51,273	57,483	57,892	50,618	62,554	81,706	**680,000**		680,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		40 Comm. C/O
	FY00 Liens	40	0	0	0	0	0	0	0	0	0	0	0	**40**		0 Uncommitted C/O
	Total Monthly Projection	52,325	51,972	48,483	49,785	54,292	61,654	51,273	57,483	57,892	50,618	62,554	81,706	**680,040**		680,040 Total FY01 Funding
	Cumulative Monthly Projection	52,325	104,298	152,781	202,566	256,859	318,513	369,786	427,269	485,162	535,780	598,334	680,040			
	Cumulative Costs	77,864	136,497	177,022											-16%	
	Cumulative Costs + Liens	77,904	136,537	177,062											-16%	

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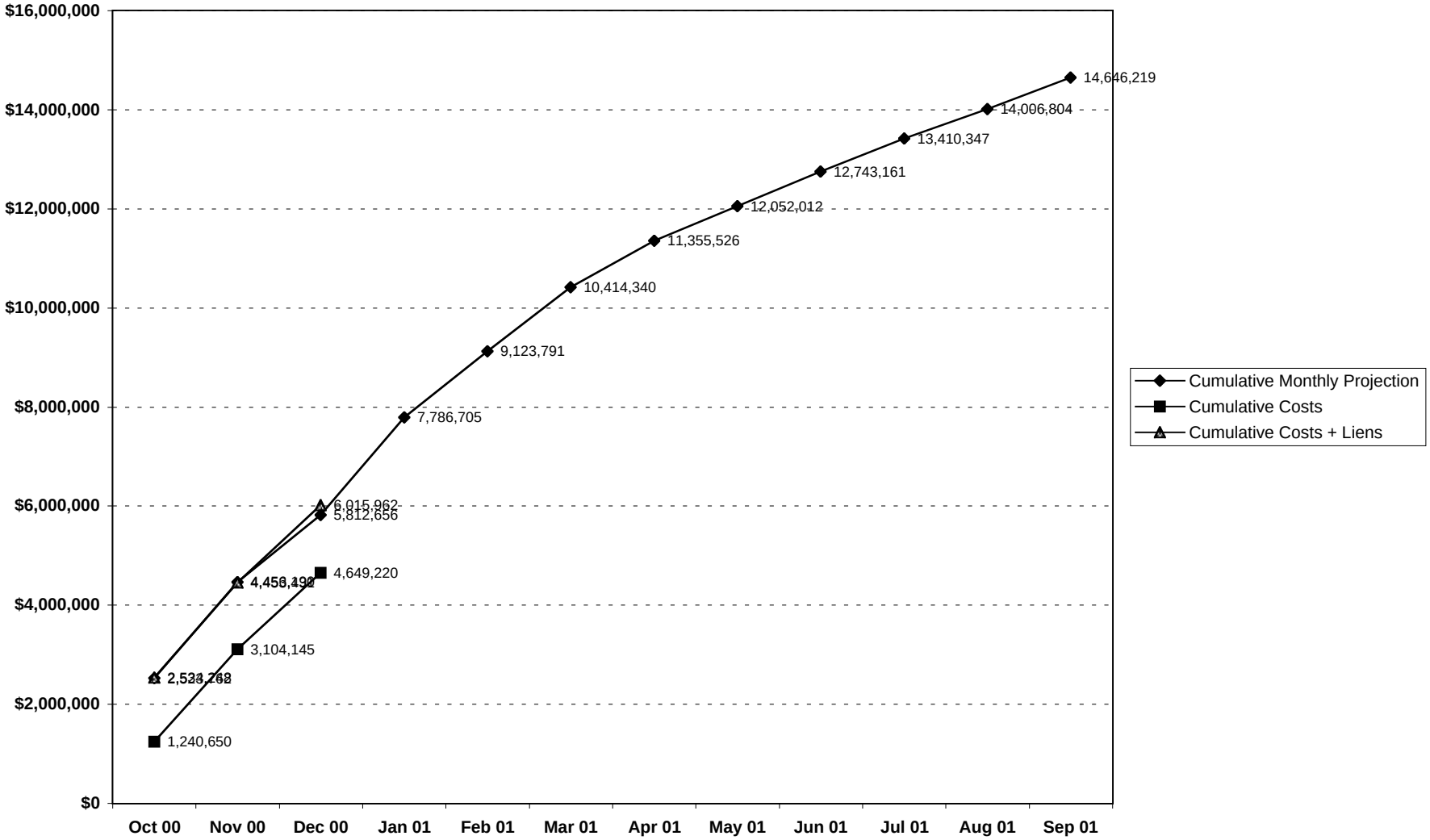
5.2.3	D&T Form Qualification Total	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.		
	Lead - Henry Shaw																
	Manpower Projection	228,494	244,029	219,748	262,680	258,485	284,118	271,412	275,021	257,704	240,642	255,599	275,072	**3,073,000**		3,073,000	New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		49,229	Comm. C/O
	FY00 Liens	49,229	0	0	0	0	0	0	0	0	0	0	0	**49,229**		0	Uncommitted C/O
	Total Monthly Projection	277,723	244,029	219,748	262,680	258,485	284,118	271,412	275,021	257,704	240,642	255,599	275,072	**3,122,229**		3,122,229	Total FY01 Funding
	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	2,591,558	2,847,157	3,122,229				
	Cumulative Costs	268,434	493,918	778,597											-5%		
	Cumulative Costs + Liens	311,572	538,035	810,888											-9%		

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	Sept 01	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**		250,000	New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0	Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0	Uncommitted C/O
	Total Monthly Projection	0	0	5,000	5,000	60,000	100,000	80,000	0	0	0	0	0	**250,000**		250,000	Total FY01 Funding
	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%		

	All Labs 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.		
	Lead - Tom Gould																
	Manpower Projection	2,421,471	2,897,544	2,385,536	3,058,518	2,472,612	2,729,249	2,009,274	1,722,152	2,095,066	1,703,507	1,707,952	1,726,608	**26,929,488**		27,296,000	New FY01 Funds
	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**		2,433,052	Comm. C/O
	FY00 Liens	2,433,052	0	0	0	0	0	0	0	0	0	0	0	**2,433,052**		24,488	Uncommitted C/O
																	Total FY01 All Labs
	Total Monthly Projection	4,884,522	2,927,544	2,415,536	3,298,518	2,477,612	2,734,249	2,024,274	1,736,152	2,105,066	1,707,507	1,711,952	1,730,608	**29,753,540**		29,753,540	Funding
	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				
	Cumulative Costs	2,092,470	4,746,925	7,119,273											30%		
	Cumulative Costs + Liens	4,910,516	7,631,693	9,950,348											3%		

LLNL - Immobilization



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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 DiSabatino															
	Manpower Projection	15,000	15,000											**30,000**		30,000 New FY01 Funds
	Major Procurement Projection													**0**		271,970 Comm. C/O
	FY00 Liens	271,970												**271,970**		Uncommitted C/O
	Total Monthly Projection	286,970	15,000	0	0	0	0	0	0	0	0	0	0	**301,970**		301,970 Total FY01 Funding
	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			
	Cumulative Costs	109,515	150,110	240,181											20%	
	Cumulative Costs + Liens	285,711	246,732	339,997											-13%	

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	267,000	90,000	100,000	100,000	120,000	100,000	100,000	100,000	120,000	100,000	120,000	**1,370,000**		1,370,000 New FY01 Funds
	Major Procurement Projection													**0**		116,572 Comm. C/O
	FY00 Liens	116,572												**116,572**		Uncommitted C/O
	Total Monthly Projection	169,572	267,000	90,000	100,000	100,000	120,000	100,000	100,000	100,000	120,000	100,000	120,000	**1,486,572**		1,486,572 Total FY01 Funding
	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%	

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.**	
	Tehmau 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**		503,000 New FY01 Funds
	Major Procurement Projection													**0**		63,285 Comm. C/O
	FY00 Liens	63,285												**63,285**		Uncommitted C/O
	Total Monthly Projection	535,285	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	2,000	2,000	**566,285**		566,285 Total FY01 Funding
	Cumulative 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 Costs	76,770	116,979	147,050											73%	
	Cumulative Costs + Liens	534,844	538,000	537,335											1%	

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 DiSabatino															
	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	**220,000**		220,000 New FY01 Funds
	Major Procurement Projection													**0**		164,100 Comm. C/O
	FY00 Liens	164,100												**164,100**		Uncommitted C/O
	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**		384,100 Total FY01 Funding
	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	166,876	167,081											18%	

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.**	
	Tehmau 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**		3,100,000 New FY01 Funds
	Major Procurement Projection													**0**		0 Comm. C/O
	FY00 Liens													**0**		Uncommitted C/O
	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**		3,100,000 Total FY01 Funding
	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			
	Cumulative Costs	0	527,625	498,851											36%	
	Cumulative Costs + Liens	0	527,625	498,851											36%	

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 - Tehmau Kan															
	Manpower Projection	525,380	806,666	371,333	381,333	381,333	401,333	381,333	381,333	381,333	401,333	380,333	399,953	**5,193,000**		5,193,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		343,957 Comm. C/O
	FY00 Liens	343,957	0	0	0	0	0	0	0	0	0	0	0	**343,957**		0 Uncommitted C/O
	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	399,953	**5,536,957**		5,536,957 Total FY01 Funding
	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			
	Cumulative Costs	129,638	802,547	878,323											57%	
	Cumulative Costs + Liens	868,309	1,639,580	1,687,253											18%	

LLNL FY01 Spend Plan

5.2.2.1.1 Feed Materials Characterization and Blending

Al DiSabatino

	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	31,120	22,000	21,880										**75,000**		75,000 New FY01 Funds
Major Procurement Projection													**0**		1,045 Comm. C/O
FY00 Liens	1,045												**1,045**		Uncommitted C/O
Total Monthly Projection	32,165	22,000	21,880	0	0	0	0	0	0	0	0	0	**76,045**		76,045 Total FY01 Funding
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											2%	
Cumulative Costs + Liens	32,165	70,591	75,821											0%	

5.2.2.1.2 Proliferation Resistance

Al DiSabatino

	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	20,000	10,000	10,000	5,000	5,000	5,000	5,000	5,000	5,000	**80,000**		200,000 New FY01 Funds
Major Procurement Projection				120,000									**120,000**		0 Comm. C/O
FY00 Liens													**0**		Uncommitted C/O
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**		200,000 Total FY01 Funding
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											100%	
Cumulative Costs + Liens	0	0	0											100%	

5.2.2.1.3 System Integration and Cross-cutting Functions

Al DiSabatino

	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	31,891	36,609	35,500	35,500	35,500	35,000	35,000	35,000	35,000	35,000	25,000	25,000	**400,000**		500,000 New FY01 Funds
Major Procurement Projection				100,000									**100,000**		2,861 Comm. C/O
FY00 Liens	2,861												**2,861**		Uncommitted C/O
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**		502,861 Total FY01 Funding
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	69,730											35%	
Cumulative Costs + Liens	34,752	52,147	73,411											31%	

5.2.2.1.4 Material Transport

Al DiSabatino

	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 New FY01 Funds
Major Procurement Projection													**0**		0 Comm. C/O
FY00 Liens													**0**		Uncommitted C/O
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Total FY01 Funding
Cumulative Monthly Projection	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!	

5.2.2.1 Technical Support & Integration Total

Lead - Al DiSabatino

	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	63,011	58,609	67,380	55,500	45,500	45,000	40,000	40,000	40,000	40,000	30,000	30,000	**555,000**		775,000 New FY01 Funds
Major Procurement Projection	0	0	0	220,000	0	0	0	0	0	0	0	0	**220,000**		3,906 Comm. C/O
FY00 Liens	3,906	0	0	0	0	0	0	0	0	0	0	0	**3,906**		0 Uncommitted C/O
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**		778,906 Total FY01 Funding
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%	

5.2.2.2.3 Processt Control Model Development

Bart Ebbinghaus

	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	79,000	48,000	36,000	34,000	28,000	17,000							**242,000**		242,000 New FY01 Funds
Major Procurement Projection													**0**		89,708 Comm. C/O
FY00 Liens	89,708												**89,708**		Uncommitted C/O
Total Monthly Projection	168,708	48,000	36,000	34,000	28,000	17,000	0	0	0	0	0	0	**331,708**		**331,708** Total FY01 Funding
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			
Cumulative Costs	78,539	130,174	221,062											13%	
Cumulative Costs + Liens	168,246	219,881	270,770											-7%	

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5.2.2.2	**Immobilized Form 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.**	
	Lead - Guy Armantrout															
	Manpower Projection	79,000	48,000	36,000	34,000	28,000	17,000	0	0	0	0	0	0	**242,000**		242,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		89,708 Comm. C/O
	FY00 Liens	89,708	0	0	0	0	0	0	0	0	0	0	0	**89,708**		0 Uncommitted C/O
	Total Monthly Projection	168,708	48,000	36,000	34,000	28,000	17,000	0	0	0	0	0	0	**331,708**		**331,708** Total FY01 Funding
	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			
	Cumulative Costs	78,539	130,174	221,062											13%	
	Cumulative Costs + Liens	168,246	219,881	270,770											-7%	

5.2.2.3.3	**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.**	
	Mark Bronson															
	Manpower Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 New FY01 Funds
	Major Procurement Projection	0												**0**		0 Comm. C/O
	FY00 Liens	0												**0**		Uncommitted C/O
	Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		**0** Total FY01 Funding
	Cumulative Monthly Projection	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!	

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.**	
	Mark Bronson															
	Manpower Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 New FY01 Funds
	Major Procurement Projection													**0**		0 Comm. C/O
	FY00 Liens													**0**		Uncommitted C/O
	Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		**0** Total FY01 Funding
	Cumulative Monthly Projection	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!	

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.**	
	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**		1,571,000 New FY01 Funds
	Major Procurement Projection													**0**		18,204 Comm. C/O
	FY00 Liens	18,204												**18,204**		Uncommitted C/O
	Total Monthly Projection	178,204	230,000	150,000	450,000	220,000	210,000	151,000	0	0	0	0	0	**1,589,204**		**1,589,204** Total FY01 Funding
	Cumulative Monthly Projection	178,204	408,204	558,204	1,008,204	1,228,204	1,438,204	1,589,204	1,589,204	1,589,204	1,589,204	1,589,204	1,589,204			
	Cumulative Costs	137,187	461,164	800,732											-43%	
	Cumulative Costs + Liens	168,972	491,739	1,109,298											-99%	

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.**	
	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**		400,000 New FY01 Funds
	Major Procurement Projection													**0**		0 Comm. C/O
	FY00 Liens													**0**		Uncommitted C/O
	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**		**400,000** Total FY01 Funding
	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			
	Cumulative Costs	24,078	49,606	100,545											-6%	
	Cumulative Costs + Liens	24,078	49,606	100,545											-6%	

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.**	
	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**		400,000 New FY01 Funds
	Major Procurement Projection													**0**		20,905 Comm. C/O
	FY00 Liens	20,905												**20,905**		Uncommitted C/O
	Total Monthly Projection	57,905	50,000	50,000	50,000	38,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	**420,905**		**420,905** Total FY01 Funding
	Cumulative Monthly Projection	57,905	107,905	157,905	207,905	245,905	270,905	295,905	320,905	345,905	370,905	395,905	420,905			
	Cumulative Costs	37,230	102,852	184,156											-17%	
	Cumulative Costs + Liens	58,735	123,757	184,890											-17%	

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5.2.2.3	Plutonium Conversion Process/ Equipment 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.	
	Lead - Mark Bronson															
	Manpower Projection	222,000	315,000	235,000	585,000	293,000	285,000	196,000	55,000	55,000	45,000	45,000	40,000	**2,371,000**		2,371,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		39,109 Comm. C / O
	FY00 Liens	39,109	0	0	0	0	0	0	0	0	0	0	0	**39,109**		0 Uncommitted C / O
	Total Monthly Projection	261,109	315,000	235,000	585,000	293,000	285,000	196,000	55,000	55,000	45,000	45,000	40,000	**2,410,109**		**2,410,109** Total FY01 Funding
	Cumulative Monthly Projection	261,109	576,109	811,109	1,396,109	1,689,109	1,974,109	2,170,109	2,225,109	2,280,109	2,325,109	2,370,109	2,410,109			
	Cumulative Costs	196,469	611,595	1,083,406											-34%	
	Cumulative Costs + Liens	249,758	663,075	1,392,707											-72%	

5.2.2.4.2.1	Ceramification Process 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.	
	Guy Armantrout															
	Manpower Projection	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**		437,000 New FY01 Funds
	Major Procurement Projection					5,000	5,000	5,000	4,000	4,000	4,000	4,000	4,000	**35,000**		60,073 Comm. C / O
	FY00 Liens	60,073												**60,073**		Uncommitted C / O
	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**		497,073 Total FY01 Funding
	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			
	Cumulative Costs	3,418	12,292	106,838											-51%	
	Cumulative Costs + Liens	63,492	72,365	106,911											-51%	

5.2.2.4.2.2	Plutonium Ceramic Test Facility (PuCTF)	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.	
	Guy Armantrout															
	Manpower Projection	580,000	600,000	550,000	600,000	500,000	400,000	90,000	5,000	5,000	5,000	5,000	5,000	**3,345,000**		3,455,000 New FY01 Funds
	Major Procurement Projection	30,000	30,000	30,000	20,000	0	0	0	0					**110,000**		140,677 Comm. C / O
	FY00 Liens	140,678												**140,678**		Uncommitted C / O
	Total Monthly Projection	750,678	630,000	580,000	620,000	500,000	400,000	90,000	5,000	5,000	5,000	5,000	5,000	**3,595,678**		3,595,677 Total FY01 Funding
	Cumulative Monthly Projection	750,678	1,380,678	1,960,678	2,580,678	3,080,678	3,480,678	3,570,678	3,575,678	3,580,678	3,585,678	3,590,678	3,595,678			
	Cumulative Costs	580,540	1,125,428	1,757,302											10%	
	Cumulative Costs + Liens	751,477	1,335,075	1,849,775											6%	

5.2.2.4.3	Puck NDE/MC&A for Process 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	Cum. Var.	
	Guy Armantrout															
	Manpower Projection	0	0	0	0	0	30,000	100,000	80,000	80,000	60,000	20,000	20,000	**390,000**		416,000 New FY01 Funds
	Major Procurement Projection							10,000	10,000	6,000				**26,000**		0 Comm. C / O
	FY00 Liens													**0**		Uncommitted C / O
	Total Monthly Projection	0	0	0	0	0	30,000	110,000	90,000	86,000	60,000	20,000	20,000	**416,000**		416,000 Total FY01 Funding
	Cumulative Monthly Projection	0	0	0	0	0	30,000	140,000	230,000	316,000	376,000	396,000	416,000			
	Cumulative Costs	-13	2,355	3,520											#DIV / 0!	
	Cumulative Costs + Liens	-13	2,355	3,520											#DIV / 0!	

5.2.2.4.4	Recycle of Unacceptable Materials	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.	
	Guy Armantrout															
	Manpower Projection						5,000	10,000	12,000					**27,000**		27,000 New FY01 Funds
	Major Procurement Projection													**0**		0 Comm. C / O
	FY00 Liens													**0**		Uncommitted C / O
	Total Monthly Projection	0	0	0	0	0	5,000	10,000	12,000	0	0	0	0	**27,000**		27,000 Total FY01 Funding
	Cumulative Monthly Projection	0	0	0	0	0	5,000	15,000	27,000	27,000	27,000	27,000	27,000			
	Cumulative Costs	32	65	65											#DIV / 0!	
	Cumulative Costs + Liens	32	65	65											#DIV / 0!	

5.2.2.4	First Stage Immobilization Process/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	Sep 01	Totals	Cum. Var.	
	Lead - Guy Armantrout															
	Manpower Projection	583,500	603,500	553,500	603,500	525,000	465,000	253,000	152,000	140,000	125,000	80,000	80,000	**4,164,000**		4,335,000 New FY01 Funds
	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**		200,750 Comm. C / O
	FY00 Liens	200,751	0	0	0	0	0	0	0	0	0	0	0	**200,751**		0 Uncommitted C / O
	Total Monthly Projection	814,251	633,500	583,500	623,500	530,000	470,000	268,000	166,000	150,000	129,000	84,000	84,000	**4,535,751**		4,535,750 Total FY01 Funding
	Cumulative Monthly Projection	814,251	1,447,751	2,031,251	2,654,751	3,184,751	3,654,751	3,922,751	4,088,751	4,238,751	4,367,751	4,451,751	4,535,751			
	Cumulative Costs	583,977	1,140,140	1,867,724											8%	
	Cumulative Costs + Liens	814,988	1,409,860	1,960,271											3%	

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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.**	
	Tehmau Kan															
	Manpower Projection	3,800	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	**50,000**		50,000 New FY01 Funds
	Major Procurement Projection													**0**		779 Comm. C/O
	FY00 Liens	779												**779**		Uncommitted C/O
	Total Monthly Projection	4,579	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	**50,779**		50,779 Total FY01 Funding
	Cumulative Monthly Projection	4,579	8,379	19,779	29,679	37,079	44,479	48,479	50,779	50,779	50,779	50,779	50,779			
	Cumulative Costs	3,833	3,839	2,668											87%	
	Cumulative Costs + Liens	4,611	4,618	4,344											78%	

5.2.2.5	**Second Stage Immobilization Process/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**	**Sep 01**	**Totals**	**Cum. Var.**	
	Lead - Tehmau Kan															
	Manpower Projection	3,800	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	**50,000**		50,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		779 Comm. C/O
	FY00 Liens	779	0	0	0	0	0	0	0	0	0	0	0	**779**		0 Uncommitted C/O
	Total Monthly Projection	4,579	3,800	11,400	9,900	7,400	7,400	4,000	2,300	0	0	0	0	**50,779**		50,779 Total FY01 Funding
	Cumulative Monthly Projection	4,579	8,379	19,779	29,679	37,079	44,479	48,479	50,779	50,779	50,779	50,779	50,779			
	Cumulative Costs	3,833	3,839	2,668											87%	
	Cumulative Costs + Liens	4,611	4,618	4,344											78%	

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**	**Sep 01**	**Totals**	**Cum. Var.**	
	Henry Shaw															
	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**		280,000 New FY01 Funds
	Major Procurement Projection													**0**		0 Comm. C/O
	FY00 Liens													**0**		Uncommitted C/O
	Total Monthly 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**		**280,000** Total FY01 Funding
	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			
	Cumulative Costs	21,341	46,931	71,815											-11%	
	Cumulative Costs + Liens	21,341	46,931	71,815											-11%	

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**	**Sep 01**	**Totals**	**Cum. Var.**	
	Henry Shaw															
	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**		120,000 New FY01 Funds
	Major Procurement Projection													**0**		0 Comm. C/O
	FY00 Liens													**0**		Uncommitted C/O
	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**		**120,000** Total FY01 Funding
	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			
	Cumulative Costs	6,660	18,366	28,236											-2%	
	Cumulative Costs + Liens	6,660	18,366	28,236											-2%	

5.2.3.1	**Total Form Performance Testing and Dissolution Modeling**	**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.**	
	Henry Shaw															
	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**		400,000 New FY01 Funds
	Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
	FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Uncommitted C/O
	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**		**400,000** Total FY01 Funding
	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			
	Cumulative Costs	28,001	65,296	100,051											-8%	
	Cumulative Costs + Liens	28,001	65,296	100,051											-8%	

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.**	
	Henry Shaw															
	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**		300,000 New FY01 Funds
	Major Procurement Projection													**0**		40 Comm. C/O
	FY00 Liens	40												**40**		Uncommitted C/O
	Total Monthly Projection	21,123	21,083	21,083	26,354	21,083	26,354	21,083	21,083	26,354	21,083	26,354	47,000	**300,040**		**300,040** Total FY01 Funding
	Cumulative Monthly Projection	21,123	42,207	63,290	89,644	110,728	137,082	158,165	179,248	205,603	226,686	253,040	300,040			
	Cumulative Costs	47,667	81,611	111,298											-76%	
	Cumulative Costs + Liens	47,707	81,651	111,338											-76%	

LLNL FY01 Spend Plan

5.2.3 D&T Form Qualification Total *Lead - Henry Shaw*	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	51,853	51,853	51,853	64,816	51,853	64,816	51,853	51,853	64,816	51,853	57,123	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	64,816	51,853	51,853	64,816	51,853	57,123	85,462	**700,040**	
Cumulative Monthly Projection	51,893	103,745	155,598	220,413	272,266	337,082	388,934	440,787	505,603	557,455	614,578	700,040		
Cumulative Costs	75,668	146,907	211,349											-36%
Cumulative Costs + Liens	75,708	146,947	211,389											-36%

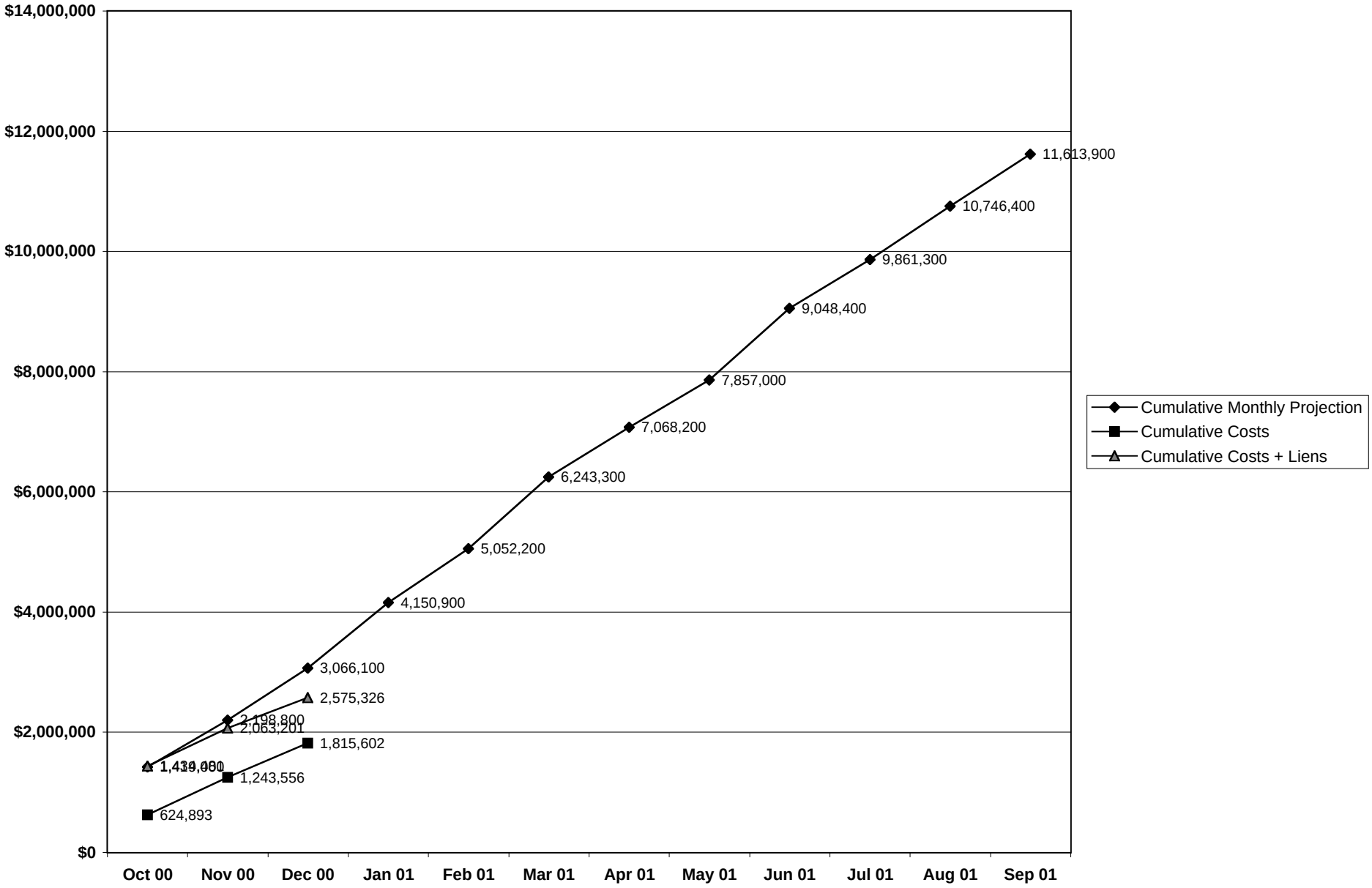
700,000	New FY01 Funds
40	Comm. C/O
0	Uncommitted C/O
700,040	Total FY01 Funding

LLNL Immobilization and Associated Processing Total *Lead - Tom Gould*	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	1,543,544	1,902,428	1,326,466	1,734,049	1,332,086	1,285,549	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	**391,000**	
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	1,290,549	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	7,786,705	9,123,791	10,414,340	11,355,526	12,052,012	12,743,161	13,410,347	14,006,804	14,646,219		
Cumulative Costs	1,240,650	3,104,145	4,649,220											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



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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 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Total FY00 Funding
Cumulative Monthly Projection	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!	

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.	Funding Totals
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**		500,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly 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**		500,000 Total FY00 Funding
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			
Cumulative Costs	30,428	69,412	95,452											1%	
Cumulative Costs + Liens	30,428	69,412	95,452											1%	

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**		170,000 FY00 Funding
Major Procurement Projection													**0**		13,500 Comm. C / O
FY00 Liens	13,500												**13,500**		0 Unob C / O
Total Monthly Projection	21,200	11,100	10,200	10,500	16,400	18,700	14,000	17,100	15,400	13,700	17,100	18,100	**183,500**		183,500 Total FY00 Funding
Cumulative Monthly Projection	21,200	32,300	42,500	53,000	69,400	88,100	102,100	119,200	134,600	148,300	165,400	183,500			
Cumulative Costs	11,730	23,738	37,939											11%	
Cumulative Costs + Liens	63,530	84,238	93,491											-120%	

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**		100,000 FY00 Funding
Major Procurement Projection													**0**		400 Comm. C / O
FY00 Liens	400												**400**		0 Unob C / O
Total Monthly Projection	12,400	10,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	6,000	**100,400**		100,400 Total FY00 Funding
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			
Cumulative Costs	11,481	22,826	29,878											2%	
Cumulative Costs + Liens	11,769	23,210	30,262											0%	

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**		770,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		13,900 Comm. C / O
FY00 Liens	13,900	0	0	0	0	0	0	0	0	0	0	0	**13,900**		0 Unob C / O
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**		783,900 Total FY00 Funding
Cumulative Monthly Projection	65,600	118,700	168,900	222,400	281,800	353,500	420,500	490,600	564,000	635,700	710,800	783,900			
Cumulative Costs	53,639	115,976	163,269											3%	
Cumulative Costs + Liens	105,727	176,860	219,205											-30%	

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.	
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**		210,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly 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**		210,000 Total FY00 Funding
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			
Cumulative Costs	6,120	13,734	26,462											-15%	
Cumulative Costs + Liens	6,120	13,734	26,462											-15%	

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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 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Total FY00 Funding
Cumulative Monthly Projection	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!	

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**		510,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	101,000	93,000	83,000	58,000	68,000	77,000	30,000	0	0	0	0	0	**510,000**		510,000 Total FY00 Funding
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			
Cumulative Costs	101,741	192,793	270,237											2%	
Cumulative Costs + Liens	101,741	192,793	270,237											2%	

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**		60,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		60,000 Total FY00 Funding
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			
Cumulative Costs	0	1,597	6,077											-1%	
Cumulative Costs + Liens	0	1,597	6,077											-1%	

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**		110,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		110,000 Total FY00 Funding
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			
Cumulative Costs	5,399	6,134	10,636											24%	
Cumulative Costs + Liens	5,399	6,134	10,636											24%	

5.2.2.1 Technical Support & Integration 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	113,000	108,500	98,500	82,000	103,000	114,000	73,300	42,300	42,300	40,300	36,300	36,500	**890,000**		890,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C / O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C / O
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	**890,000**		890,000 Total FY00 Funding
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			
Cumulative Costs	113,260	214,258	313,412											2%	
Cumulative Costs + Liens	113,260	214,258	313,412											2%	

5.2.2.3 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**		342,000 FY00 Funding
Major Procurement Projection													**0**		2,000 Comm. C / O
FY00 Liens	2,000												**2,000**		0 Unob C / O
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**		344,000 Total FY00 Funding
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			
Cumulative Costs	22,097	45,313	88,882											26%	
Cumulative Costs + Liens	35,097	55,978	88,882											26%	

5.2.2.2 Immobilized Form 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	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**		342,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	0		2,000 Comm. C / O
FY00 Liens	2,000	0	0	0	0	0	0	0	0	0	0	0	**2,000**		0 Unob C / O
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**		344,000 Total FY00 Funding
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			
Cumulative Costs	22,097	45,313	88,882											26%	
Cumulative Costs + Liens	35,097	55,978	88,882											26%	

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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**		55,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		55,000 Total FY00 Funding
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%	

5.2.2.3.3 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**		30,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	7,500	7,500	7,500	7,500	0	0	0	0	0	0	**30,000**		30,000 Total FY00 Funding
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											100%	
Cumulative Costs + Liens	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**		125,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		125,000 Total FY00 Funding
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**		20,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	10,000	10,000	0	0	0	0	0	0	0	0	0	**20,000**		20,000 Total FY00 Funding
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											100%	
Cumulative Costs + Liens	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**		20,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	10,000	10,000	0	0	0	0	0	0	0	0	0	**20,000**		20,000 Total FY00 Funding
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**		240,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		240,000 Total FY00 Funding
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**		22,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	5,000	5,000	6,000	6,000	0	0	0	0	0	**22,000**		22,000 Total FY00 Funding
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!	

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5.2.2.3.10 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	0	0	0	0	0	**20,000**		20,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	5,000	5,000	5,000	5,000	0	0	0	0	0	**20,000**		20,000 Total FY00 Funding
Cumulative Monthly Projection	0	0	0	5,000	10,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000			
Cumulative Costs	0	0	0											#DIV / 0!	
Cumulative Costs + Liens	0	0	0											#DIV / 0!	

5.2.2.3 Pu Conversion Process/Equipment 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	53,700	59,200	49,200	60,200	61,600	41,400	33,700	33,800	29,300	34,600	51,100	**532,000**		532,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C / O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C / O
Total Monthly Projection	24,200	53,700	59,200	49,200	60,200	61,600	41,400	33,700	33,800	29,300	34,600	51,100	**532,000**		532,000 Total FY00 Funding
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			
Cumulative Costs	22,857	48,869	87,334											36%	
Cumulative Costs + Liens	22,857	48,869	87,334											36%	

5.2.2.4.1 Ceramic Feed Batching	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	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**		470,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		470,000 Total FY00 Funding
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			
Cumulative Costs	12,797	29,551	47,574											48%	
Cumulative Costs + Liens	12,797	29,551	47,574											48%	

5.2.2.4.2.1 Ceramification Process 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 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Total FY00 Funding
Cumulative Monthly Projection	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!	

5.2.2.4.2.3 Ceramification Prototype 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	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**		5,115,000 FY00 Funding
Major Procurement Projection													**0**		457,300 Comm. C / O
FY00 Liens	457,300												**457,300**		0 Unob C / O
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**		5,572,300 Total FY00 Funding
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%	

5.2.2.4.2.2 Plutonium Ceramic Test Facility (PuCTF)	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	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**		480,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		480,000 Total FY00 Funding
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			
Cumulative Costs	28,875	56,977	83,939											19%	
Cumulative Costs + Liens	28,875	56,977	83,939											19%	

5.2.2.4.3 Puck NDE/MC&A for Process 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	Cum. 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**		957,000 FY00 Funding
Major Procurement Projection													**0**		245,700 Comm. C / O
FY00 Liens	245,700												**245,700**		0 Unob C / O
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**		1,202,700 Total FY00 Funding
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%	

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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**		382,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		382,000 Total FY00 Funding
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%	

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**		109,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		109,000 Total FY00 Funding
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%	

5.2.2.4 First Stage Immobilization Process/ 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	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**		7,513,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		703,000 Comm. C / O
FY00 Liens	703,000	0	0	0	0	0	0	0	0	0	0	0	**703,000**		0 Unob C / O
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	**8,216,000**		8,216,000 Total FY00 Funding
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%	

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	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**		200,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		200,000 Total FY00 Funding
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			
Cumulative Costs	26,482	42,803	58,784											-1%	
Cumulative Costs + Liens	26,482	48,152	62,782											-8%	

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**		100,000 FY00 Funding
Major Procurement Projection													**0**		43,000 Comm. C / O
FY00 Liens	43,000												**43,000**		0 Unob C / O
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**		143,000 Total FY00 Funding
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			
Cumulative Costs	21,728	38,361	45,626											58%	
Cumulative Costs + Liens	63,228	88,861	70,626											35%	

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	7,000	8,000	8,000	8,000	8,000	8,000	8,000	**55,000**		55,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	0	0	7,000	8,000	8,000	8,000	8,000	8,000	8,000	**55,000**		55,000 Total FY00 Funding
Cumulative Monthly Projection	0	0	0	0	0	7,000	15,000	23,000	31,000	39,000	47,000	55,000			
Cumulative Costs	0	613	613											#DIV / 0!	
Cumulative Costs + Liens	0	613	613											#DIV / 0!	

5.2.2.5 Second Stage Immobilization Process/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	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**		355,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		43,000 Comm. C / O
FY00 Liens	43,000	0	0	0	0	0	0	0	0	0	0	0	**43,000**		0 Unob C / O
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	**398,000**		398,000 Total FY00 Funding
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			
Cumulative Costs	48,210	81,777	105,023											37%	
Cumulative Costs + Liens	89,710	137,626	134,021											20%	

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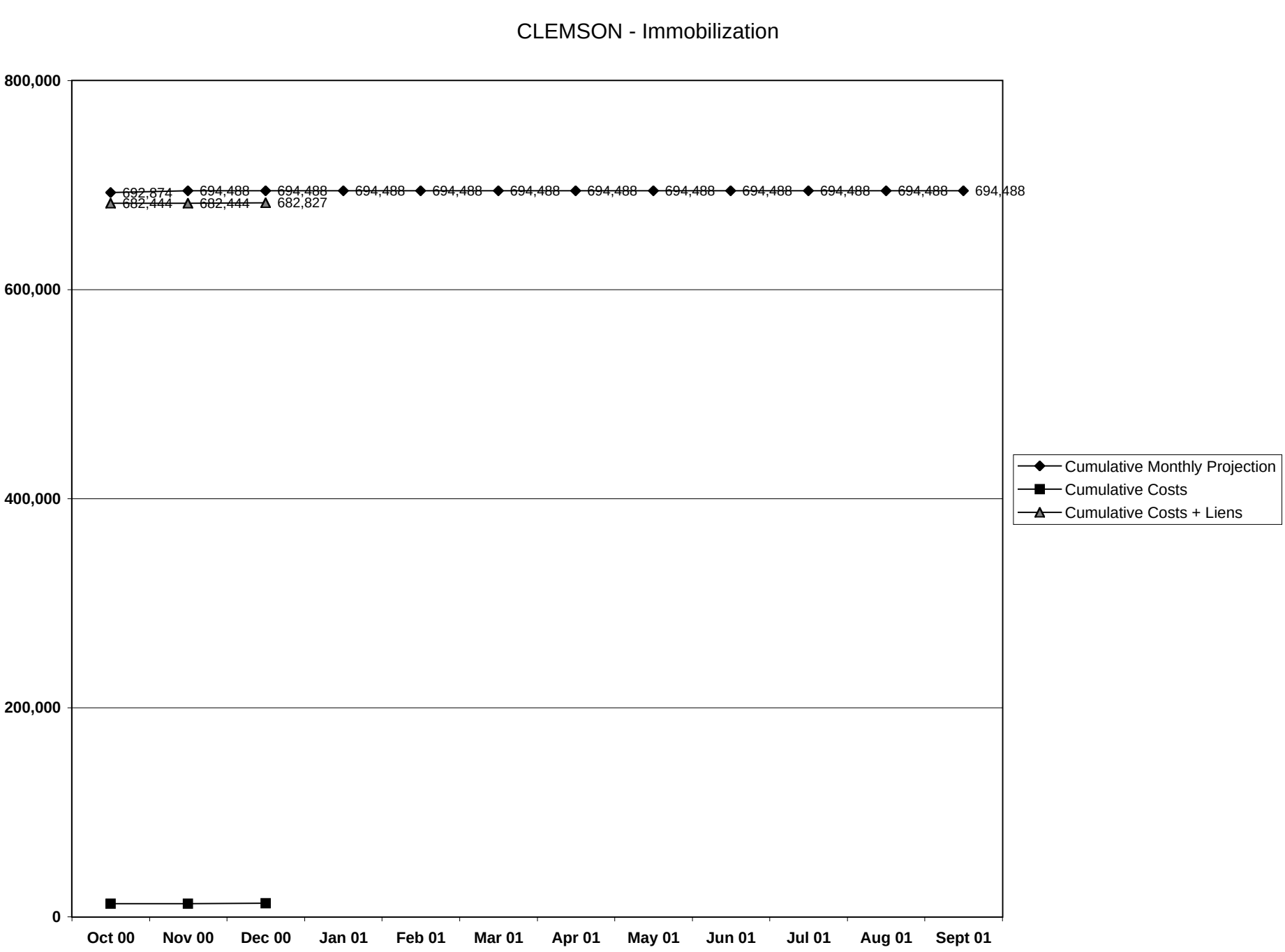
5.2.3.4 Form Qualification and Repository Interaction	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sep 01	Totals	Cum. Var.	
Manpower Projection	9,300	19,200	15,500	9,200	19,200	21,200	15,300	21,300	17,300	14,100	20,000	18,400	**200,000**		200,000 FY00 Funding
Major Procurement Projection													**0**		0 Comm. C / O
FY00 Liens													**0**		0 Unob C / O
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**		200,000 Total FY00 Funding
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%	

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**		200,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C / O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C / O
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**		200,000 Total FY00 Funding
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%	

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**		250,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C / O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C / O
Total Monthly Projection	0	0	5,000	5,000	60,000	100,000	80,000	0	0	0	0	0	**250,000**		250,000 Total FY00 Funding
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%	

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**		10,852,000 FY00 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		761,900 Comm. C / O
FY00 Liens	761,900	0	0	0	0	0	0	0	0	0	0	0	**761,900**		0 Unob C / O
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**		11,613,900 Total FY00 Funding
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%	


CLEMSON - Immobilization
800,000
600,000
400,000
200,000
0
Oct 00
Nov 00
Dec 00
Jan 01
Feb 01
Mar 01
Apr 01
May 01
Jun 01
Jul 01
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Sept 01
692,874
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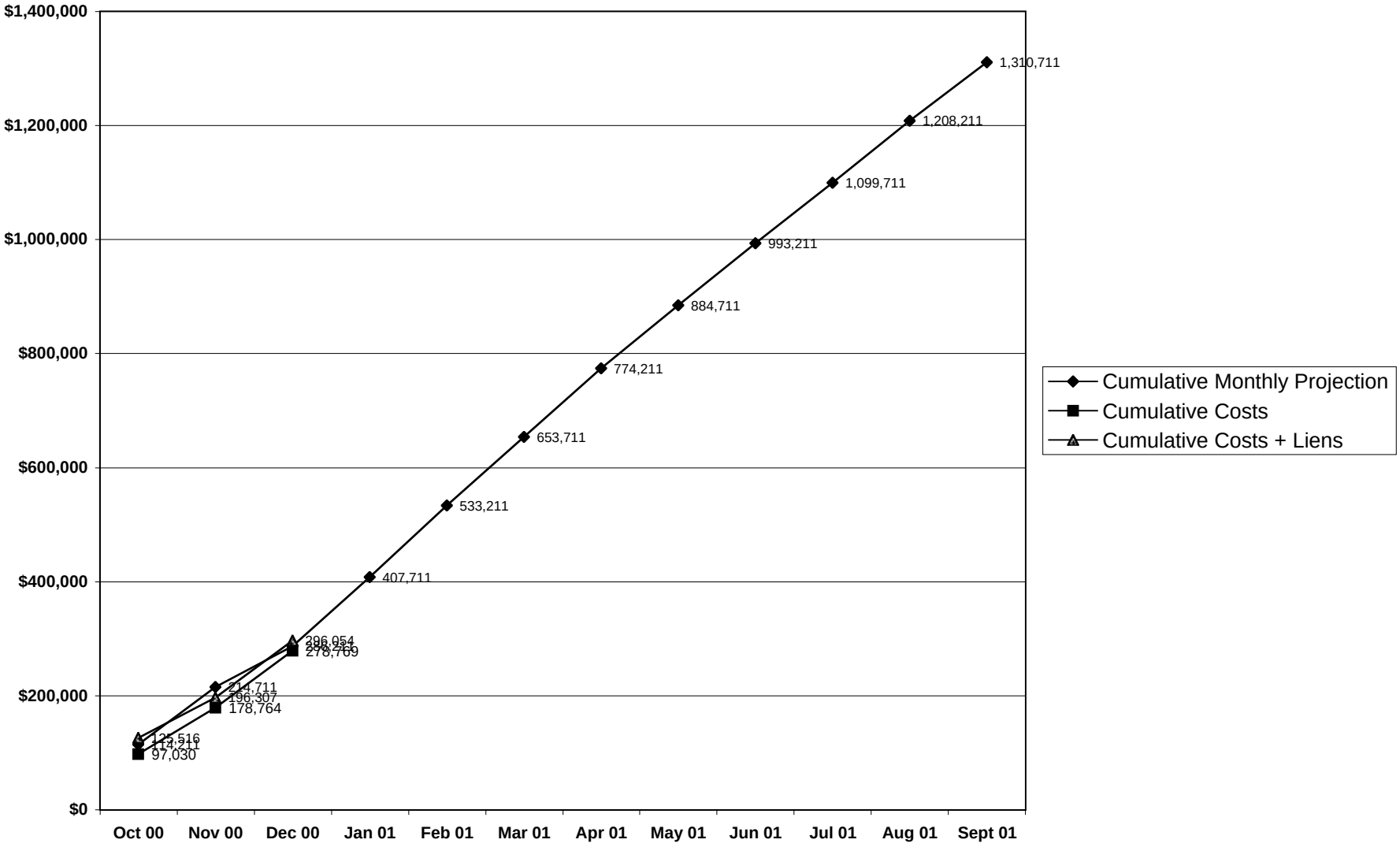
694,488
694,488
694,488
694,488
694,488
694,488
694,488
682,444
682,444
682,827
Cumulative Monthly Projection
Cumulative Costs
Cumulative Costs + Liens

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 FY01 Funding
Major Procurement Projection													**0**		670,000 Comm. C / O
FY00 Liens	670,000												**670,000**		24,488 Unob C / O
Total Monthly Projection	692,874	1,614	0	0	0	0	0	0	0	0	0	0	**694,488**		694,488 Total FY01 Funding
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%	

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 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		670,000 Comm. C / O
FY00 Liens	670,000	0	0	0	0	0	0	0	0	0	0	0	**670,000**		24,488 Unob C / O
Total Monthly Projection	692,874	1,614	0	0	0	0	0	0	0	0	0	0	**694,488**		694,488 Total FY01 Funding
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%	

ANL - Immobilization



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**		66,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C/O
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**		66,000 Total FY01 Funding
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			
Cumulative Costs	5,400	11,000	16,600											-1%	
Cumulative Costs + Liens	5,400	11,000	16,600											-1%	

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**		208,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C/O
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**		208,000 Total FY01 Funding
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			
Cumulative Costs	10,000	19,200	28,100											0%	
Cumulative Costs + Liens	10,000	19,200	28,100											0%	

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**		274,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
FY00 Liens	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Unob C/O
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**		274,000 Total FY01 Funding
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			
Cumulative Costs	15,400	30,200	44,700											0%	
Cumulative Costs + Liens	15,400	30,200	44,700											0%	

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**		124,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
FY00 Liens	0												**0**		0 Unob C/O
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**		124,000 Total FY01 Funding
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			
Cumulative Costs	23,200	40,000	57,200											-73%	
Cumulative Costs + Liens	23,200	40,000	57,200											-73%	

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**		359,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		17,500 Comm. C/O
FY00 Liens	17,500												**17,500**		0 Unob C/O
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**		376,500 Total FY01 Funding
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			
Cumulative Costs	25,700	53,100	84,300											4%	
Cumulative Costs + Liens	39,200	62,100	93,300											-7%	

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**		430,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		16,211 Comm. C/O
FY00 Liens	16,211												**16,211**		0 Unob C/O
Total Monthly Projection	46,211	35,000	25,000	40,000	40,000	40,000	40,000	35,000	35,000	35,000	40,000	35,000	**446,211**		446,211 Total FY01 Funding
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			
Cumulative Costs	28,230	46,964	80,869											24%	
Cumulative Costs + Liens	43,216	55,507	89,154											16%	

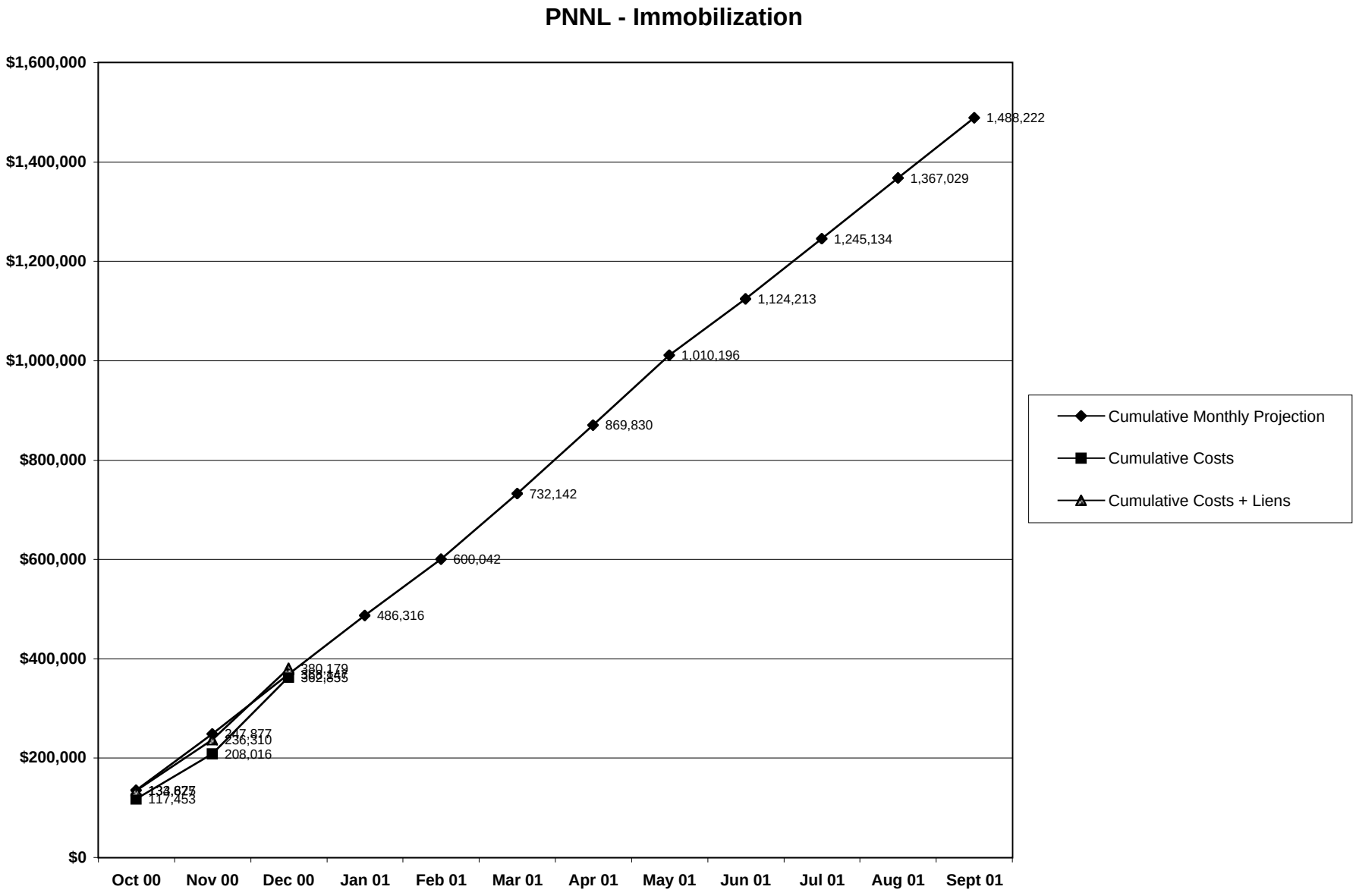
5.2.3.1 Form Performance Testing and Dissolution Modeling Total	Oct 00	Nov 00	Dec 00	Jan 01	Feb 01	Mar 01	Apr 01	May 01	Jun 01	Jul 01	Aug 01	Sept 01	Totals	Cum. Var.	
Manpower Projection	60,000	80,000	53,000	88,000	87,000	82,000	82,000	77,000	77,000	75,000	79,000	73,000	**913,000**		913,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		33,711 Comm. C/O
FY00 Liens	33,711	0	0	0	0	0	0	0	0	0	0	0	**33,711**		0 Unob C/O
Total Monthly Projection	93,711	80,000	53,000	88,000	87,000	82,000	82,000	77,000	77,000	75,000	79,000	73,000	**946,711**		946,711 Total FY01 Funding
Cumulative Monthly Projection	93,711	173,711	226,711	314,711	401,711	483,711	565,711	642,711	719,711	794,711	873,711	946,711			
Cumulative Costs	77,130	140,064	222,369											2%	
Cumulative Costs + Liens	105,616	157,607	239,654											-6%	

ANL 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	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 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Comm. C/O
FY00 Liens	0												**0**		0 Unob C/O
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 Total FY01 Funding
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			
Cumulative Costs	4,500	8,500	11,700											22%	
Cumulative Costs + Liens	4,500	8,500	11,700											22%	

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 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		33,711 Comm. C/O
FY00 Liens	33,711	0	0	0	0	0	0	0	0	0	0	0	**33,711**		0 Unob C/O
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 Total FY01 Funding
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			
Cumulative Costs	81,630	148,564	234,069											3%	
Cumulative Costs + Liens	110,116	166,107	251,354											-4%	

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 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		33,711 Comm. C/O
FY00 Liens	33,711	0	0	0	0	0	0	0	0	0	0	0	**33,711**		0 Unob C/O
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 Total FY01 Funding
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			
Cumulative Costs	97,030	178,764	278,769											3%	
Cumulative Costs + Liens	125,516	196,307	296,054											-3%	


PNNL - Immobilization
$1,600,000
$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
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Oct 00
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Feb 01
Mar 01
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sept 01
1,488,222
1,367,029
1,245,134
1,124,213
1,010,196
869,830
732,142
600,042
486,316
380,179
362,855
247,877
236,310
208,016
117,453
Cumulative Monthly Projection
Cumulative Costs
Cumulative Costs + Liens

PNNL 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.	Funding Totals
Manpower Projection	703	6,232	6,871	7,956	6,871	8,456	7,594	7,956	7,594	7,732	7,232	6,803	**82,000**		82,000 New FY01 Funds
Major Procurement Projection													**0**		0 Comm. C / O*
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	703	6,232	6,871	7,956	6,871	8,456	7,594	7,956	7,594	7,732	7,232	6,803	**82,000**		82,000 Total FY01 Funding
Cumulative Monthly Projection	703	6,935	13,806	21,762	28,633	37,089	44,683	52,639	60,233	67,965	75,197	82,000			
Cumulative Costs	703	7,679	13,534											2%	
Cumulative Costs + Liens	703	7,679	13,534											2%	

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**		219,000 New FY01 Funds
Major Procurement Projection													**0**		1,744 Comm. C / O*
FY00 Liens	1,744												**1,744**		0 Unob C / O
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**		220,744 Total FY01 Funding
Cumulative Monthly Projection	16,153	35,147	54,151	71,700	86,123	101,665	117,500	133,042	148,877	171,377	195,564	220,744			
Cumulative Costs	14,409	27,261	45,765											15%	
Cumulative Costs + Liens	16,171	29,021	48,123											11%	

5.2.1 Project Management 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	15,112	25,226	25,875	25,505	21,294	23,998	23,429	23,498	23,429	30,232	31,419	31,983	**301,000**		301,000 New FY01 Funds
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		1,744 Comm. C / O*
FY00 Liens	1,744	0	0	0	0	0	0	0	0	0	0	0	**1,744**		0 Unob C / O
Total Monthly Projection	16,856	25,226	25,875	25,505	21,294	23,998	23,429	23,498	23,429	30,232	31,419	31,983	**302,744**		302,744 Total FY01 Funding
Cumulative Monthly Projection	16,856	42,082	67,957	93,462	114,756	138,754	162,183	185,681	209,110	239,342	270,761	302,744			
Cumulative Costs	15,112	34,940	59,299											13%	
Cumulative Costs + Liens	16,874	36,700	61,657											9%	

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.	
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	**593,000**		593,000 FY01 Funding
Major Procurement Projection													**0**		0 Comm. C / O*
FY00 Liens													**0**		0 Unob C / O
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	**593,000**		593,000 Total FY01 Funding
Cumulative Monthly Projection	33,212	71,728	113,752	158,532	210,553	270,387	334,600	399,751	451,961	500,439	547,792	593,000			
Cumulative Costs	33,212	66,671	125,729											-11%	
Cumulative Costs + Liens	33,212	66,671	126,888											-12%	

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	10,083	11,750	10,450	8,012	1,100	1,051	1,002	928	926	897	902	899	**48,000**		48,000 FY01 Funding
Major Procurement Projection													**0**		0 Comm. C / O*
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	10,083	11,750	10,450	8,012	1,100	1,051	1,002	928	926	897	902	899	**48,000**		48,000 Total FY01 Funding
Cumulative Monthly Projection	10,083	21,833	32,283	40,295	41,395	42,446	43,448	44,376	45,302	46,199	47,101	48,000			
Cumulative Costs	10,083	23,009	35,977											-11%	
Cumulative Costs + Liens	10,083	25,633	38,601											-20%	

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.	
Manpower Projection	42,144	31,021	35,021	33,641	33,302	41,117	42,154	43,689	31,214	34,879	35,021	35,797	**439,000**		439,000 New FY01 Funds
Major Procurement Projection													**0**		15,478 Comm. C / O*
FY00 Liens	15,478												**15,478**		0 Unob C / O
Total Monthly Projection	57,622	31,021	35,021	33,641	33,302	41,117	42,154	43,689	31,214	34,879	35,021	35,797	**454,478**		454,478 Total FY01 Funding
Cumulative Monthly Projection	57,622	88,643	123,664	157,305	190,607	231,724	273,878	317,567	348,781	383,660	418,681	454,478			
Cumulative Costs	42,144	62,381	117,449											5%	
Cumulative Costs + Liens	56,756	86,291	128,632											-4%	

PNNL Immoblization Spend Plan

5.2.3.2.1 Aqueous Solubility/Speciation Measurements	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**		0 New FY01 Funds
Major Procurement Projection													**0**		0 Comm. C / O*
FY00 Liens													**0**		0 Unob C / O
Total Monthly Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		0 Total FY01 Funding
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		#DIV / 0!	
Cumulative Costs + Liens	0	0	0	0	0	0	0	0	0	0	0	0		#DIV / 0!	

5.2.3.1 Form Performance Testing and Dissolution Modeling	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**		1,080,000 New FY01 Funds
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		15,478 Comm. C / O*
FY00 Liens	15,478	0	0	0	0	0	0	0	0	0	0	0	**15,478**		0 Unob C / O
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**		1,095,478 Total FY01 Funding
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			
Cumulative Costs	85,439	152,061	279,155											-4%	
Cumulative Costs + Liens	100,051	178,595	294,121											-9%	

5.2.3.4 Form Qualification and Repository Interactions	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**		90,000 New FY01 Funds
Major Procurement Projection													**0**		0 Comm. C / O*
FY00 Liens													**0**		0 Unob C / O
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**		90,000 Total FY01 Funding
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			
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	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**		1,170,000 New FY01 Funds
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		15,478 Comm. C / O*
FY00 Liens	15,478	0	0	0	0	0	0	0	0	0	0	0	**15,478**		0 Unob C / O
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**		1,185,478 Total FY01 Funding
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			
Cumulative Costs	102,341	173,076	303,556											-1%	
Cumulative Costs + Liens	116,953	199,610	318,522											-6%	

PNNL 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	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**		1,471,000 FY01 Funding
Major Procurement Projection	0	0	0	0	0	0	0	0	0	0	0	0	**0**		17,222 Comm. C / O*
FY00 Liens	17,222	0	0	0	0	0	0	0	0	0	0	0	**17,222**		0 Unob C / O
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**		1,488,222 Total FY01 Funding
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	1,488,222			
Cumulative Costs	117,453	208,016	362,855											1%	
Cumulative Costs + Liens	133,827	236,310	380,179											-3%	

0

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