



DRAFT
RESEARCH SUPPORT BUILDING AND
INFRASTRUCTURE MODERNIZATION

WORK BREAKDOWN STRUCTURE DICTIONARY



April 2009
SLAC-I-050-07010-005

| WBS Number | | | | | | Title |
|------------|----|----|----|----|--|--|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | | | | | | RSB Project - TEC This summary WBS covers the Total Estimated Cost (TEC) Estimate for the Research Support Building (RSB) and Infrastructure Modernization Project being developed and constructed at SLAC. The RSB TEC is supported through Project Engineering and Design (PED) and Construction funds by the U.S. Department of Energy. |
| 1 | 01 | | | | | Project Office This Summary WBS cell covers the total cost of management and other directories support efforts for RSB Project at SLAC |
| 1 | 01 | 01 | | | | ES&H This summary WBS cell describes the ES&H support for the RSB project at SLAC |
| 1 | 01 | 01 | 01 | | | Safety This WBS element captures efforts of the safety coordinator and other effort and associated supplies needed to manage safety related issues in the design and construction phases of the RSB Project. |
| 1 | 01 | 01 | 02 | | | Environmental Protection This WBS element captures all environmental protection support, including air and excavation permitting, sampling, and stormwater protection. |
| 1 | 01 | 01 | 03 | | | Radiation Protection This WBS element captures all efforts associated with radiation surveys and removal of sources from existing buildings. |
| 1 | 01 | 01 | 04 | | | Security This WBS element captures efforts of the safeguard and security coordinator and other effort and associated supplies needed to manage safety of project and site personnel whom are affected by decision made during project planning, design, construction, and testing stages of the RSB Project. |
| 1 | 01 | 01 | 05 | | | Hazardous Material This WBS element captures efforts in the removal of all hazardous materials and waste (PCB ballasts, asbestos, soil) associated with demolition and construction activities. |
| 1 | 01 | 01 | 06 | | | NEPA This WBS element captures efforts associated with the preparation, review, and approval of the NEPA review for the project |
| 1 | 01 | 01 | 07 | | | Waste Minimization This WBS element captures all efforts associated with minimizing waste and maximizing recycling during demolition and construction. |
| 1 | 01 | 02 | | | | Project Management This summary WBS cell covers the Project Management support for the RSB project at SLAC. |
| 1 | 01 | 02 | 01 | | | Project Management This element captures efforts of the Project Director, Project Manager, Deputy Project Manager and Principal Engineer, and the Project Manager. Manage assigned projects to ensure planning, design, and pre-construction activities meet project goals and objectives and that work is done in accordance with DOE, SLAC requirements and Facilities Development Division requirements. Manage and coordinate Architect-Engineer (A-E) contract. Participate in A-E design reviews and status meetings, LEED and Commissioning planning. Prepare project support documents. The Principal Engineer (PE) will assure that the Intergraded Project Team (IPT) has reviewed the project with regard to environmental protection, radiation protection, fire protection, constructability, etc., and that the design is consistent with SLAC standards. The Design Team (DT) will issue the design documents for approval and the PE will ensure that electronic drawing files have appropriate drawing numbers assigned by the SLAC Document Number Reservation System. . The PE will sign the drawings. The PM/DPM will sign the documents and issue to Records Mar |
| 1 | 01 | 03 | | | | Project/Finance Support This summary WBS cell covers the Project/Finance support, communications and cost estimating for the RSB project at SLAC. |
| 1 | 01 | 03 | 01 | | | Project/Finance Support This element captures efforts of the Project PMCS, Office Manager Computer support, and PMCS contractors, System management and Cost Accounting. Provides schedule development, analysis and maintenance using scheduling tools/software. Provides independent assessment of project performance against approved baselines and plans, and provides coordinated recommendations and analysis to various levels of management. Also includes related supplies and travel. |
| 1 | 01 | 03 | 02 | | | Communications This WBS includes any effort associated with communications with the SLAC facility (i.e. coordination and/or announcements necessary for road closures, announcements of progress and major milestones in SLAC communications). |
| 1 | 01 | 03 | 03 | | | Cost Estimating Reviews all cost estimates to ensure accuracy and consistency with DOE Cost and Estimating Guides. Provide independent assessment of project cost estimates provided by A-E or Construction contractors including a bid check estimate. Prepare/coordinate the contingency analysis in conjunction with the risk management plan. |
| 1 | 01 | 04 | | | | Procurement Support Summary level WBS for procurement support |
| 1 | 01 | 04 | 01 | | | Procurement Support Administration of construction subcontract(s) including correspondence, issuing subcontract modifications, and processing certified payrolls and billings. Generate procurement authorization documents. Coordinate transmittal and distribution of construction submittals and close-out at completion of the contract. Generate required bid documents and procure required GFE items |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|------------------------------------|---|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | 01 | 05 | | | Quality Management | The predominant quality assurance objective of RSB Quality Assurance element 1.1.5.1 is that the RSB activities will meet the project objectives and corresponding requirements. WBS 1.1.5 serves as the summary level WBS for RSB Quality Assurance activities. |
| 1 | 01 | 05 | 01 | | Quality Management | The RSB Quality Assurance element captures the effort to manage the RSB Quality Assurance Program. Work closely with all team organizations to ensure quality consistency for all activities. Provide practical guidance in implementing a variety of lower-level, detailed, quality assurance activities. Develop procedures and plans to assure that all elements of the project quality plan are implemented throughout the project. Conduct higher-level oversight function and/or coordinate required independent and third party inspections to oversee project execution efforts. Assure compliance to records management requirements for inspection reports, specifications, drawings and other quality records. Travel to vendors, subcontractors and collaborating team members facilities to support quality assurance activities. |
| 1 | 01 | 06 | | | Risk Management | This summary WBS cells covers the risk management support for the RSB project at SLAC |
| 1 | 01 | 06 | 01 | | Risk Management | This element captures efforts of risk management throughout the project life cycle. The risk assessments is performed throughout the project life cycle and identify critical, performance, schedule, and cost risks. Risk mitigation strategies and actions will be developed and documented once risks are identified. |
| 1 | 01 | 07 | | | Facility User Representative | This summary WBS cell covers Stakeholder representative support for RSB project at SLAC |
| 1 | 01 | 07 | 01 | | Facility User Representative | This element captures the efforts of stakeholder representatives serve as the Liaisons between the project and the user groups. Provide input/feedback to the space program of the project. Review office layout, user grouping adjacency, user grouping blocking/stacking in new building and renovation buildings. |
| 1 | 02 | | | | Project Engineering & Design (PED) | This summary level WBS captures all of the preliminary and final design effort associated with the Research Support Building (RSB) and Infrastructure Modernization Project being developed and constructed at SLAC. |
| 1 | 02 | 01 | | | Research Support Building - PED | This summary WBS cell covers PED for the new Research Support Building. The new Research Support Building is a conventionally office building of approximate 53,000 to 58,000 gross square feet and is built on a site of requiring demolition of 13 smaller existing structures as part of project scope. |
| 1 | 02 | 01 | 01 | | RSB - Title 1 and Title 2 Design | This element captures the A/E effort associated with the following: preparation or expand upon preliminary sketches, flow or single-line diagrams, drawings, equipment lists, layout plans, outline specifications, software descriptions, and reports showing features and characteristics of the proposed design incorporating the results of the project-related assessments and plans. Identify or update long-lead procurement items or other potential supply problems. Summarize the preliminary design (15% & 30%) for review and the preliminary design cost estimate, as required. Revise design criteria based on the preliminary design. Review final design documents at 60% and 90% completion Milestone(s). Prepare the CFC design documents, including the working drawings (refer to FDD-DM-330, Drawing Standards), calculations (refer to FDD-DM- 311, Design Analysis and Calculations) and specifications (refer to FDD-DM-310, Specifications). Design will be prepared consistent with SLAC standards. Prepare input for the final design cost estimate. The designer will sign and stamp (Professional Engineer or Registered Architect) all draw |
| 1 | 02 | 01 | 02 | | RSB - Design Support | This element of the WBS captures the management and coordination of Architect-Engineer (A-E) contract for the RSB. Participate in A-E design reviews and status meetings, LEED and Commissioning planning. Prepare project support documents. The Principal Engineer (PE) will assure that the Intergraded Project Team (IPT) has reviewed the project with regard to environmental protection, radiation protection, fire protection, constructability, etc., and that the design is consistent with SLAC standards. The Design Team (DT) will issue the design documents for approval and the PE will ensure that electronic drawing files have appropriate drawing numbers assigned by the SLAC Document Number Reservation System. . The PE will sign the drawings. The PM/DPM will sign the documents and issue to Records Management as CFC. |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|---|---|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | | 01 | 03 | | RSB - Design Reviews | The PM and/or DPM will coordinate Consultant support effort to perform independent project reviews (IPR) (3), Independent Cost Estimate (1), Technical Design Reviews (3) and/or audits of the RSB in accordance with DOE Directive 413.3. |
| 1 | 02 | 01 | 04 | | RSB - LEED Documentation and Support | This element of the WBS captures the support required to ensure that the RSB project obtains the highest possible LEED level within the constraints of the project. This will be done by working with the A/E in the design of the RSB building. This effort will also include all documentation required for LEED registration. |
| 1 | 02 | 01 | 05 | | RSB - Pre-Construction Project Management | This element captures the cost for the pre-construction project management team the RSB. The team consists of Project Manager, Estimator and Project Controls. The pre-construction project manager assisted by the Estimator and Project Controls will perform project management including meetings, RFP bid preparation/contract evaluation/award(s), coordination of design and pre-construction activities, cost and schedule reviews and coordination between design team, A-E, vendors, and Construction Manager. PM team will provide cost estimates, schedules, cost reports, financial and performance analysis. |
| 1 | 02 | 02 | | | Building 003 - PED | This summary WBS cell covers PED for renovation of building 003. The renovation area of building 003 is limited to the third floor and is approximately 7,000 square feet. |
| 1 | 02 | 02 | 01 | | Bld 003 - Title 1 and Title 2 Design | This element captures the A/E effort associated with the following: preparation or expand upon preliminary sketches, flow or single-line diagrams, drawings, equipment lists, layout plans, outline specifications, software descriptions, and reports showing features and characteristics of the proposed design incorporating the results of the project-related assessments and plans. Identify or update long-lead procurement items or other potential supply problems. Summarize the preliminary design (15% & 30%) for review and the preliminary design cost estimate, as required. Revise design criteria based on the preliminary design. Review final design documents at 60% and 90% completion Milestone(s). Prepare the CFC design documents, including the working drawings (refer to FDD-DM-330, Drawing Standards), calculations (refer to FDD-DM- 311, Design Analysis and Calculations) and specifications (refer to FDD-DM-310, Specifications). Design will be prepared consistent with SLAC standards. Prepare input for the final design cost estimate. The designer will sign and stamp (Professional Engineer or Registered Architect) all draw |
| 1 | 02 | 02 | 02 | | Bld 003 - Design Support | This element of the WBS captures the management and coordination of Architect-Engineer (A-E) contract for building 003 renovation. Participate in A-E design reviews and status meetings, LEED and Commissioning planning. Prepare project support documents. The Principal Engineer (PE) will assure that the Intergraded Project Team (IPT) has reviewed the project with regard to environmental protection, radiation protection, fire protection, constructability, etc., and that the design is consistent with SLAC standards. The Design Team (DT) will issue the design documents for approval and the PE will ensure that electronic drawing files have appropriate drawing numbers assigned by the SLAC Document Number Reservation System. . The PE will sign the drawings. The PM/DPM will sign the documents and issue to Records Management as CFC. |
| 1 | 02 | 02 | 03 | | Bld 003 - Design Reviews | The PM and/or DPM will coordinate Consultant support effort to perform independent project reviews (IPR) (3), Independent Cost Estimate (1), Technical Design Reviews (3) and/or audits of the building 003 renovation in accordance with DOE Directive 413.3. |
| 1 | 02 | 02 | 04 | | Bld 003 - LEED Documentation and Support | This element of the WBS captures the support required to ensure that the RSB project obtains the highest possible LEED level within the constraints of the project. This will be done by working with the A/E in the design of the renovation of building 003. This effort will also include all documentation required for LEED registration. |
| 1 | 02 | 02 | 05 | | Bld 003 - Pre-Construction Project Management | This element captures the cost for the pre-construction project management team for building 003. The team consists of Project Manager, Estimator and Project Controls. The pre-construction project manager assisted by the Estimator and Project Controls will perform project management including meetings, RFP bid preparation/contract evaluation/award(s), coordination of design and pre-construction activities, cost and schedule reviews and coordination between design team, A-E, vendors, and Construction Manager. PM team will provide cost estimates, schedules, cost reports, financial and performance analysis. |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|---|---|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | 02 | 03 | | | Building 024 - PED | This summary WBS cell covers PED for renovation of building 024. The renovation area of building 024 is approximately 32,000 square feet. |
| 1 | 02 | 03 | 01 | | Bld 024 - Title 1 and Title 2 Design | This element captures the A/E effort associated with the following: preparation or expand upon preliminary sketches, flow or single-line diagrams, drawings, equipment lists, layout plans, outline specifications, software descriptions, and reports showing features and characteristics of the proposed design incorporating the results of the project-related assessments and plans. Identify or update long-lead procurement items or other potential supply problems. Summarize the preliminary design (15% & 30%) for review and the preliminary design cost estimate, as required. Revise design criteria based on the preliminary design. Review final design documents at 60% and 90% completion Milestone(s). Prepare the CFC design documents, including the working drawings (refer to FDD-DM-330, Drawing Standards), calculations (refer to FDD-DM- 311, Design Analysis and Calculations) and specifications (refer to FDD-DM-310, Specifications). Design will be prepared consistent with SLAC standards. Prepare input for the final design cost estimate. The designer will sign and stamp (Professional Engineer or Registered Architect) all draw |
| 1 | 02 | 03 | 02 | | Bld 024 - Design Support | This element of the WBS captures the management and coordination of Architect-Engineer (A-E) contract for building 024 renovation. Participate in A-E design reviews and status meetings, LEED and Commissioning planning. Prepare project support documents. The Principal Engineer (PE) will assure that the Intergraded Project Team (IPT) has reviewed the project with regard to environmental protection, radiation protection, fire protection, constructability, etc., and that the design is consistent with SLAC standards. The Design Team (DT) will issue the design documents for approval and the PE will ensure that electronic drawing files have appropriate drawing numbers assigned by the SLAC Document Number Reservation System. . The PE will sign the drawings. The PM/DPM will sign the documents and issue to Records Management as CFC. |
| 1 | 02 | 03 | 03 | | Bld 024 - Design Reviews | The PM and/or DPM will coordinate Consultant support effort to perform independent project reviews (IPR) (3), Independent Cost Estimate (1), Technical Design Reviews (3) and/or audits of the building 024 renovation in accordance with DOE Directive 413.3. |
| 1 | 02 | 03 | 04 | | Bld 024 - LEED Documentation and Support | This element of the WBS captures the support required to ensure that the RSB project obtains the highest possible LEED level within the constraints of the project. This will be done by working with the A/E in the design of the renovation of building 24. This effort will also include all documentation required for LEED registration. |
| 1 | 02 | 03 | 05 | | Bld 024 - Pre-Construction Project Management | This element captures the cost for the pre-construction project management team for building 024. The team consists of Project Manager, Estimator and Project Controls. The pre-construction project manager assisted by the Estimator and Project Controls will perform project management including meetings, RFP bid preparation/contract evaluation/award(s), coordination of design and pre-construction activities, cost and schedule reviews and coordination between design team, A-E, vendors, and Construction Manager. PM team will provide cost estimates, schedules, cost reports, financial and performance analysis. |
| 1 | 02 | 04 | | | Building 041 - PED | This summary WBS cell covers PED for renovation of building 041. The renovation area of building 024 is approximately 22,000 square feet. |
| 1 | 02 | 04 | 01 | | Bld 041 - Title 1 and Title 2 Design | During the construction phase of building 041 renovation, this WBS will include any associated A/E support that may be required for the RSB Project. Review technical submittals, requests for information, construction field change orders for technical contents and provide field inspection, as requested by SLAC Facilities Development Division. When the need arises to change any design documents already issued to the CC, the DT must utilize a Design Change Notice (DCN) to communicate the reason for the change and the design documents that are impacted. The A-E will incorporate the design changes into the design drawings/documents and prepare as-built drawings. |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|---|--|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | 02 | 04 | 02 | | Bld 041 - Design Support | This element of the WBS captures the management and coordination of Architect-Engineer (A-E) contract for building 041 renovation. Participate in A-E design reviews and status meetings, LEED and Commissioning planning. Prepare project support documents. The Principal Engineer (PE) will assure that the Intergraded Project Team (IPT) has reviewed the project with regard to environmental protection, radiation protection, fire protection, constructability, etc., and that the design is consistent with SLAC standards. The Design Team (DT) will issue the design documents for approval and the PE will ensure that electronic drawing files have appropriate drawing numbers assigned by the SLAC Document Number Reservation System. . The PE will sign the drawings. The PM/DPM will sign the documents and issue to Records Management as CFC. |
| 1 | 02 | 04 | 03 | | Bld 041 - Design Reviews | The PM and/or DPM will coordinate Consultant support effort to perform independent project reviews (IPR) (3), Independent Cost Estimate (1), Technical Design Reviews (3) and/or audits of the building 041 renovation in accordance with DOE Directive 413.3. |
| 1 | 02 | 04 | 04 | | Bld 041 - LEED Documentation and Support | This element of the WBS captures the support required to ensure that the RSB project obtains the highest possible LEED level within the constraints of the project. This will be done by working with the A/E in the design of the renovation of building 41. This effort will also include all documentation required for LEED registration. |
| 1 | 02 | 04 | 05 | | Bld 041 - Pre-Construction Project Management | This element captures the cost for the pre-construction project management team for Building 041. The team consists of Project Manager, Estimator and Project Controls. The pre-construction project manager assisted by the Estimator and Project Controls will perform project management including meetings, RFP bid preparation/contract evaluation/award(s), coordination of design and pre-construction activities, cost and schedule reviews and coordination between design team, A-E, vendors, and Construction Manager. PM team will provide cost estimates, schedules, cost reports, financial and performance analysis. |
| 1 | 03 | | | | Construction | This summary level WBS captures all effort directly associated with all construction for the Research Support Building (RSB) and Infrastructure Modernization Project being developed and constructed at SLAC |
| 1 | 03 | 01 | | | Research Support Building - Construction | This summary level WBS captures all effort directly associated with the construction of the Research Support Building (RSB). |
| 1 | 03 | 01 | 01 | | RSB - Construction Management | The CM/GC will be aware of all planned subcontractor work activities associated with the RSB. They will oversee subcontractor adherence to the SLAC Integrated Safety Management Policy by construction subcontractors. Oversee subcontractor work practices for compliance with the health and safety elements of the technical specifications. Serve as point contact between the subcontractors and SLAC project team regarding technical matters and coordination of work. Inspect construction for compliance with drawings and specifications. Work with Project Management to coordinate the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. Coordinate construction activities with balance of plant operations and the Complex Facility Managers (CFMs). Provide construction counsel to the Project Manager and project team related to subcontractor schedules, subcontractor pay requests, project completion punch lists, etc. Review subcontractor certified payrolls. Provide timely notification and reporting of incidents, occurrences and events. |
| 1 | 03 | 01 | 02 | | RSB - A/E Support | During the construction phase of the RSB project, this WBS will include any associated A/E support that may be required for the RSB. Review technical submittals, requests for information, construction field change orders for technical contents and provide field inspection, as requested by SLAC Facilities Development Division. When the need arises to change any design documents already issued to the CC, the DT must utilize a Design Change Notice (DCN) to communicate the reason for the change and the design documents that are impacted. The A-E will incorporate the design changes into the design drawings/documents and prepare as-built drawings. |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|-----------------------------------|---|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | 03 | 01 | 03 | | RSB - SLAC Procurement | This WBS includes any government furnished equipment that is purchased by SLAC required for the RSB. |
| 1 | 03 | 01 | 04 | | RSB - Site Demo and Prep | This WBS includes any pre-construction site demo and prep that is required for the RSB. |
| 1 | 03 | 01 | 05 | | RSB - Construction - RSB | For the reasearch support building, perform contracted work per drawings, specifications, bills of materials, regulations, policy as defined in the contract documents and/or directed by the CM. The contractor will perform all activities in compliance with the health and safety elements of the technical specifications. The contractor will alert the CM regarding any technical matters, required coordination of work activates, changes in sequencing of activities potential field changes and timely notification and reporting of incidents, occurrences and events. The contractor participates in the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. The contractor maintains a project working file (PWF) with relevant construction documents as required/requested by the CM and/or project execution plan (including concrete test results, QA inspections, etc.). |
| 1 | 03 | 01 | 05 | 01 | RSB - TBD | TBD |
| 1 | 03 | 01 | 05 | 02 | RSB - TBD | TBD |
| 1 | 03 | 01 | 05 | 03 | RSB - TBD | TBD |
| 1 | 03 | 02 | | | Building 003 - Construction | This summary level WBS captures all effort directly associated with the renovation of Building 003 |
| 1 | 03 | 02 | 01 | | Bld 003 - Construction Management | The CM/GC will be aware of all planned subcontractor work activities associated with the Renovation of Building 003. They will oversee subcontractor adherence to the SLAC Integrated Safety Management Policy by construction subcontractors. Oversee subcontractor work practices for compliance with the health and safety elements of the technical specifications. Serve as point contact between the subcontractors and SLAC project team regarding technical matters and coordination of work. Inspect construction for compliance with drawings and specifications. Work with Project Management to coordinate the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. Coordinate construction activities with balance of plant operations and the Complex Facility Managers (CFMs). Provide construction counsel to the Project Manager and project team related to subcontractor schedules, subcontractor pay requests, project completion punch lists, etc. Review subcontractor certified payrolls. Provide timely notification and reporting of incidents, occurrences and events. |
| 1 | 03 | 02 | 02 | | Bld 003 - A/E Support | During the construction phase of building 003 renovation, this WBS will include any associated A/E support that may be required for the RSB Project. Review technical submittals, requests for information, construction field change orders for technical contents and provide field inspection, as requested by SLAC Facilities Development Division. When the need arises to change any design documents already issued to the CC, the DT must utilize a Design Change Notice (DCN) to communicate the reason for the change and the design documents that are impacted. The A-E will incorporate the design changes into the design drawings/documents and prepare as-built drawings. |
| 1 | 03 | 02 | 03 | | Bld 003 - SLAC Procurement | This WBS includes any government furnished equipment that is purchased by SLAC required for the Renovation of Building 003 |
| 1 | 03 | 02 | 04 | | Bld 003 - Site Demo and Prep | This WBS includes any pre-construction site demo and prep that is required for the Renovation of Building 003 |
| 1 | 03 | 02 | 05 | | Bld 003 - Construction - Bld 003 | For Building 003 Renovation, perform contracted work per drawings, specifications, bills of materials, regulations, policy as defined in the contract documents and/or directed by the CM. The contractor will perform all activities in compliance with the health and safety elements of the technical specifications. The contractor will alert the CM regarding any technical matters, required coordination of work activates, changes in sequencing of activities potential field changes and timely notification and reporting of incidents, occurrences and events. The contractor participates in the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. The contractor maintains a project working file (PWF) with relevant construction documents as required/requested by the CM and/or project execution plan (including concrete test results, QA inspections, etc.). |
| 1 | 03 | 02 | 05 | 01 | Bld 003 - TBD | TBD |
| 1 | 03 | 02 | 05 | 02 | Bld 003 - TBD | TBD |
| 1 | 03 | 02 | 05 | 03 | Bld 003 - TBD | TBD |

| WBS Number | | | | | | Title | |
|------------|----|----|----|----|--|-----------------------------------|---|
| L1 | L2 | L3 | L4 | L5 | | | |
| 1 | 03 | 03 | | | | Building 024 - Construction | This summary level WBS captures all effort directly associated with the renovation of Building 024 |
| 1 | 03 | 03 | 01 | | | Bld 024 - Construction Management | The CM/GC will be aware of all planned subcontractor work activities associated with the Renovation of Building 024. They will oversee subcontractor adherence to the SLAC Integrated Safety Management Policy by construction subcontractors. Oversee subcontractor work practices for compliance with the health and safety elements of the technical specifications. Serve as point contact between the subcontractors and SLAC project team regarding technical matters and coordination of work. Inspect construction for compliance with drawings and specifications. Work with Project Management to coordinate the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. Coordinate construction activities with balance of plant operations and the Complex Facility Managers (CFMs). Provide construction counsel to the Project Manager and project team related to subcontractor schedules, subcontractor pay requests, project completion punch lists, etc. Review subcontractor certified payrolls. Provide timely notification and reporting of incidents, occurrences and events. |
| 1 | 03 | 03 | 02 | | | Bld 024 - A/E Support | During the construction phase of building 024 renovation, this WBS will include any associated A/E support that may be required for the RSB Project. Review technical submittals, requests for information, construction field change orders for technical contents and provide field inspection, as requested by SLAC Facilities Development Division. When the need arises to change any design documents already issued to the CC, the DT must utilize a Design Change Notice (DCN) to communicate the reason for the change and the design documents that are impacted. The A-E will incorporate the design changes into the design drawings/documents and prepare as-built drawings. |
| 1 | 03 | 03 | 03 | | | Bld 024 - SLAC Procurement | This WBS includes any government furnished equipment that is purchased by SLAC required for the Renovation of Building 024 |
| 1 | 03 | 03 | 04 | | | Bld 024 - Site Demo and Prep | This WBS includes any pre-construction site demo and prep that is required for the Renovation of Building 024 |
| 1 | 03 | 03 | 05 | | | Bld 024 - Construction - BLD 024 | For Building 024 Renovation, perform contracted work per drawings, specifications, bills of materials, regulations, policy as defined in the contract documents and/or directed by the CM. The contractor will perform all activities in compliance with the health and safety elements of the technical specifications. The contractor will alert the CM regarding any technical matters, required coordination of work activates, changes in sequencing of activities potential field changes and timely notification and reporting of incidents, occurrences and events. The contractor participates in the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. The contractor maintains a project working file (PWF) with relevant construction documents as required/requested by the CM and/or project execution plan (including concrete test results, QA inspections, etc.). |
| 1 | 03 | 03 | 05 | 01 | | Bld 024 - TBD | TBD |
| 1 | 03 | 03 | 05 | 02 | | Bld 024 - TBD | TBD |
| 1 | 03 | 03 | 05 | 03 | | Bld 024 - TBD | TBD |
| 1 | 03 | 04 | | | | Building 041 - Construction | This summary level WBS captures all effort directly associated with the renovation of Building 041 |
| 1 | 03 | 04 | 01 | | | Bld 041 - Construction Management | The CM/GC will be aware of all planned subcontractor work activities associated with the Renovation of Building 041. They will oversee subcontractor adherence to the SLAC Integrated Safety Management Policy by construction subcontractors. Oversee subcontractor work practices for compliance with the health and safety elements of the technical specifications. Serve as point contact between the subcontractors and SLAC project team regarding technical matters and coordination of work. Inspect construction for compliance with drawings and specifications. Work with Project Management to coordinate the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. Coordinate construction activities with balance of plant operations and the Complex Facility Managers (CFMs). Provide construction counsel to the Project Manager and project team related to subcontractor schedules, subcontractor pay requests, project completion punch lists, etc. Review subcontractor certified payrolls. Provide timely notification and reporting of incidents, occurrences and events. |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|----------------------------------|--|
| L1 | L2 | L3 | L4 | L5 | | |
| 1 | 03 | 04 | 02 | | Bld 041 - A/E Support | During the construction phase of building 041 renovation, this WBS will include any associated A/E support that may be required for the RSB Project. Review technical submittals, requests for information, construction field change orders for technical contents and provide field inspection, as requested by SLAC Facilities Development Division. When the need arises to change any design documents already issued to the CC, the DT must utilize a Design Change Notice (DCN) to communicate the reason for the change and the design documents that are impacted. The A-E will incorporate the design changes into the design drawings/documents and prepare as-built drawings. |
| 1 | 03 | 04 | 03 | | Bld 041 - SLAC Procurement | This WBS includes any government furnished equipment that is purchased by SLAC required for the Renovation of Building 041 |
| 1 | 03 | 04 | 04 | | Bld 041 - Site Demo and Prep | This WBS includes any pre-construction site demo and prep that is required for the Renovation of Building 041 |
| 1 | 03 | 04 | 05 | | Bld 041 - Construction - BLD 041 | For Building 041 Renovation, perform contracted work per drawings, specifications, bills of materials, regulations, policy as defined in the contract documents and/or directed by the CM. The contractor will perform all activities in compliance with the health and safety elements of the technical specifications. The contractor will alert the CM regarding any technical matters, required coordination of work activities, changes in sequencing of activities potential field changes and timely notification and reporting of incidents, occurrences and events. The contractor participates in the pre-bid meetings, pre-construction meetings, periodic project status meetings, etc. The contractor maintains a project working file (PWF) with relevant construction documents as required/requested by the CM and/or project execution plan (including concrete test results, QA inspections, etc.). |
| 1 | 03 | 04 | 05 | 01 | Bld 041 - TBD | TBD |
| 1 | 03 | 04 | 05 | 02 | Bld 041 - TBD | TBD |
| 1 | 03 | 04 | 05 | 03 | Bld 041 - TBD | TBD |
| 2 | | | | | RSB Project - OPC | This summary WBS cell covers the total Other Project Costs of RSB project funding by SLAC |
| 2 | 01 | | | | Conceptual Planning | This summary WBS cell covers the initial planning stage which defines its long-range and performance goals. It also captures the effort of the process which provides a systematic framework for prioritizing program needs, allocating resources, measuring performance and delivering results |
| 2 | 01 | 01 | | | Project Support | This summary WBS cell covers project management and planning effort during the initiation phase of the project |
| 2 | 01 | 01 | 01 | | Project Support | During this phase, conceptual planning activities focus on the Program's strategic goals and objectives. User needs are analyzed for consistency with the strategic plan and management direction. Alternative concepts, based on user requirements, risks, costs, and other constraints, are analyzed to arrive at a recommended alternative. This is accomplished using Systems Engineering and other techniques and tools such as alternatives analysis and Value Management/Value Engineering. This ensures the recommended alternative provides the essential functions and capability at optimum life cycle cost, consistent with required performance, scope, schedule, cost, security, and Environment, Safety and Health considerations. During this phase, the required Value Management assessment is completed, and more detailed planning is accomplished which further defines required capabilities. The products produced by this planning provide the detail necessary to develop a range of estimates for the project cost and schedule. This phase also includes efforts to plan and execute advanced procurement for the AE/CM. Manage and coordinate Ar |
| 2 | 01 | 02 | | | Conceptual Design Report | This summary level WBS captures all effort directly associated with the design of the conceptual design report. |

| WBS Number | | | | | Title | |
|------------|----|----|----|----|---|---|
| L1 | L2 | L3 | L4 | L5 | | |
| 2 | 01 | 02 | 01 | | A/E Design | This element captures the A/E effort associated with conceptual planning and a conceptual design report. User needs are analyzed for consistency with the strategic plan and management direction. Alternative concepts, based on user requirements, risks, costs, and other constraints, are analyzed to arrive at a recommended alternative. This is accomplished using Systems Engineering and other techniques and tools such as alternatives analysis and Value Management/Value Engineering. This ensures the recommended alternative provides the essential functions and capability at optimum life cycle cost, consistent with required performance, scope, schedule, cost, security, and Environment, Safety and Health considerations. During this phase, the required Value Management assessment is completed, and more detailed planning is accomplished which further defines required capabilities. The products produced by this planning provide the detail necessary to develop a range of estimates for the project cost and schedule. This phase also includes efforts to plan and execute advanced procurement for the AE/CM. |
| 2 | 01 | 02 | 02 | | Design Support / Reviews | This element captures any SLAC effort directly associated with supporting the A/E. It includes providing the A/E with necessary reproductions of drawings and and spec of existing buildings. This WBS also includes any non SLAC effort associated with any reviews throughout the design process. |
| 2 | 02 | | | | Commissioning / Start-Up and Operations | This element summarizes the building system commissioning, start-up and operations costs |
| 2 | 02 | 01 | | | Commissioning | This WBS cell covers the building system commissioning effort |
| 2 | 02 | 01 | 01 | | Commissioning | This element of the WBS captures the commissioning effort. Commissioning will be performed to plan to ensure building performance requirements and functional needs are met in accordance with the approved project commissioning plan. |
| 2 | 02 | 02 | | | Start-Up and Operations | This WBS cell covers the building system start-up and operation effort |
| 2 | 02 | 02 | 01 | | Start-Up and Operations | This element of the WBS captures the start-up and operation effort. Start-up and operation will be performed to plan to ensure building performance requirements and functional needs are met in accordance with the approved project start-up and operation plan. |