Exhibit 300: Capital Asset Plan and Business Case Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview (All Capital Assets)

1. Date of Submission:	9/10/2007
2. Agency:	Department of Energy
3. Bureau:	Energy Programs
4. Name of this Capital Asset:	LBNL NERSC
5. Unique Project (Investment) Identifier: (For IT investment only, see section 53. For all other, use agency ID system.)	019-20-01-21-01-2019-00
6. What kind of investment will this be in FY2009? (Please NOTE: Investments moving to O&M in FY2009, with Planning/Acquisition activities prior to FY2009 should not select O&M. These investments should indicate their current status.)	Mixed Life Cycle
7. What was the first budget year this investment was submitted to OMB?	FY2001 or earlier

8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap:

SC LBNL NERSC, sponsored by the Department of Energy Office of Science acquires, operates and maintains a supercomputer facility at Lawrence Berkeley National Laboratory in Berkeley California. The NERSC facility, designated as DOE's Flagship Supercomputing Facility, provides one of the most effective and productive unclassified high end computing resources for computational sciences in the world. This investment supports the programmatic goals of the Department of Energy and Office of Science by operating increasingly higher performance computers to enable advances in scientific research sponsored by the Department of Energy and its collaborators. This investment addresses the performance gap by reducing the deficit between computational research hours needed by and delivered to science programs. Over the past four years, the hours requested by science programs grew from 114.7M in 2004 to 200.4M in 2007. This growth trend to support U.S. science competitiveness is expected to continue. Additionally, the growth rate is expected to be compounded by initiatives like Scientific Discovery through Advanced Computing-II and the Innovative and Novel Computational Impact on Theory and Experiment Programs which produced over 190.6M requested hours since 2004. Without the additional hours, scientists will not deliver world class science. With the current budget, NERSC is on track in 2007 to deliver 95 million Computational Resource Hours with an expanded goal of delivering 450 million in 2008, 725 million in 2009 and over 1,200 million in 2010. In addition to this increase in computational hours, the facility will continue to maintain customer satisfaction and resource availability for its 2800+ users across the scientific community. The performance targets are inline DOE theme 3 Scientific Discovery and DOE strategic goals 3.2 and 3.1 and the Office of Science's strategic goals to close the computational gap for open science research. NERSC directly supports the mission through its business functions: (1) service to citizens, general scientific innovation, scientific and technological research and innovations: (2) mode of delivery, knowledge creation and management, research and development. Finally, the management of this investment involves extensive collaboration with the science community to include DOE energy researchers, NASA, DOD, NSF, university researchers, industrial research collaborators and international science bodies.

9. Did the Agency's Executive/Investment Committee approve this request?	Yes
a. If "yes," what was the date of this approval?	8/27/2007
10. Did the Project Manager review this Exhibit?	Yes
11. Contact information of Project Manager?	
Name	Yip, Warren
Phone Number	510-486-4297
Email	wjyip@lbl.gov
a. What is the current FAC-P/PM certification level of the project/program manager?	TBD
12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable techniques or practices for this project?	Yes
a. Will this investment include electronic assets (including computers)?	Yes

b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only)	No
1. If "yes," is an ESPC or UESC being used to help fund this investment?	
2. If "yes," will this investment meet sustainable design principles?	
3. If "yes," is it designed to be 30% more energy efficient than relevant code?	
13. Does this investment directly support one of the PMA initiatives?	Yes
If "yes," check all that apply:	Human Capital Competitive Sourcing R and D Investment Criteria
a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? (e.g. If E-Gov is selected, is it an approved shared service provider or the managing partner?)	Human Capital-ensure the Nation's top scientists effectively use the latest technology solving energy sciences toughest issues. Competitive Sourcing-outsources the M & O to Govt Owned, Contractor Operated Labs subcontracts to the Nation's top technology providers, IBM, CRAY, SGI, Linux Networx and others. R&D Investment-ensures SC makes the most productive investments by offering top of line technology to enable scientific discovery.
14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)? (For more information about the PART, visit www.whitehouse.gov/omb/part.)	Yes
a. If "yes," does this investment address a weakness found during a PART review?	Yes
b. If "yes," what is the name of the PARTed program?	Advanced Scientific Computing Research
c. If "yes," what rating did the PART receive?	Moderately Effective
15. Is this investment for information technology?	Yes

If the answer to Question 15 is "Yes," complete questions 16-23 below. If the answer is "No," do not answer questions 16-23.

For information technology investments only:

16. What is the level of the IT Project? (per CIO Council PM Guidance)	Level 2
17. What project management qualifications does the Project Manager have? (per CIO Council PM Guidance)	(1) Project manager has been validated as qualified for this investment
18. Is this investment or any project(s) within this investment identified as "high risk" on the Q4 - FY 2007 agency high risk report (per OMB Memorandum M-05-23)	No
19. Is this a financial management system?	No
a. If "yes," does this investment address a FFMIA compliance area?	
1. If "yes," which compliance area:	
2. If "no," what does it address?	

b. If "yes," please identify the system name(s) and system acronym(s) as reported in the most recent financial systems inventory update required by Circular A-11 section 52

20. What is the percentage breakout for the total FY2009 funding request for the following? (This should total 100%)

Hardware	59
Software	2
Services	39
Other	0
21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities?	N/A

22. Contact information of individual responsible for privacy related questions:

Name	Ramsey, Dawyne
Phone Number	510-495-2971
Title	Privacy Officer
E-mail	dgramsey@lbl.gov
23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval?	Yes
Question 24 must be answered by all Investments:	
24. Does this investment directly support one of the GAO High Risk Areas?	No

Section B: Summary of Spending (All Capital Assets)

1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated "Government FTE Cost," and should be excluded from the amounts shown for "Planning," "Full Acquisition," and "Operation/Maintenance." The "TOTAL" estimated annual cost of the investment is the sum of costs for "Planning," "Full Acquisition," and "Operation/Maintenance." For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.

Table 1: SUMMARY OF SPENDING FOR PROJECT PHASES (REPORTED IN MILLIONS)
(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)

	PY-1 and earlier	PY 2007	CY 2008	BY 2009	BY+1 2010	BY+2 2011	BY+3 2012	BY+4 and beyond	Total
Planning:	0.504	0.1	0.415	0					
Acquisition:	5.663	4.632	0.402	1.206					
Subtotal Planning & Acquisition:	6.167	4.732	0.817	1.206					
Operations & Maintenance:	102.058	32.777	53.403	53.604					
TOTAL:	108.225	37.509	54.220	54.810					
Government FTE Costs should not be included in the amounts provided above.									
Government FTE Costs	0.02	0.02	0.02	0.02					
Number of FTE represented by Costs:	1	1	1	1					

Note: For the multi-agency investments, this table should include all funding (both managing partner and partner agencies). Government FTE Costs should not be included as part of the TOTAL represented.

2. Will this project require the agency to hire additional FTE's? No

a. If "yes," How many and in what year?

3. If the summary of spending has changed from the FY2008 President's budget request, briefly explain those changes:

Section C: Acquisition/Contract Strategy (All Capital Assets)

1. Complete the table for all (including all non-Federal) contracts and/or task orders currently in place or planned for this investment. Total Value should include all option years for each contract. Contracts and/or task orders completed do not need to be included.

Contracts/Task Orders Table: * Costs in millions

Contract or Task Order Number	Type of Contract/ Task Order	Has the contract been awarded (Y/N)	If so what is the date of the award? If not, what is the planned award date?	Start date of Contract/ Task Order	End date of Contract/ Task Order	Total Value of Contract/ Task Order ($M)	Is this an Interagency Acquisition? (Y/N)	Is it performance based? (Y/N)	Competitively awarded? (Y/N)	What, if any, alternative financing option is being used? (ESPC, UESC, EUL, N/A)	Is EVM in the contract? (Y/N)	Does the contract include the required security & privacy clauses? (Y/N)	Name of CO	CO Contact information (phone/email)	Contracting Officer Certification Level (Level 1,2,3,N/A)	If N/A, has the agency determined the CO assigned has the competencies and skills necessary to support this acquisition? (Y/N)
DE-AC02-05CH11231	Cost Reimbursable	Yes	4/19/2005	6/1/2005	5/30/2025	390.709	No	Yes	Yes	NA	Yes	Yes	Marshall, Charles	510-486-5184 / cwmarshall@lbl.gov	Level 3	
6486511-IBM	Firm-fixed Price	Yes	4/1/1999	4/1/1999	12/1/2007	31.7	No	Yes	Yes	NA	No	Yes	Marshall, Charles	510-486-5184 / cwmarshall@lbl.gov	Level 3	
6806365-Cray	Firm-fixed Price	Yes	7/1/2006	7/1/2006	8/9/2013	52.045	No	Yes	Yes	NA	No	Yes	Marshall, Charles	510-486-5184 / cwmarshall@lbl.gov	Level 3	

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:

Earned value is not a contract requirement for the IBM or the Cray subcontracts because the Laboratory meets earned value requirements set by DOE without passing on the same requirements to their subcontracts. NERSC's major contracts such as the IBM and Cray contracts are firm fixed price contracts with fixed price performance milestones. If schedule or performance requirements are not met, the price and delivery of services is renegotiated to compensate for the undelivered performance.

3. Do the contracts ensure Section 508 compliance?	Yes
a. Explain why:	California State law provides functional equivalence to Section 508 compliance which applies to Federal employees and members of the public seeking information from Federal Agencies. LBNL is operated by the University of California and must comply with California State Law requiring reasonable accommodation to members of the public and employees.
4. Is there an acquisition plan which has been approved in accordance with agency requirements?	Yes
a. If "yes," what is the date?	4/1/2005
b. If "no," will an acquisition plan be developed?	
1. If "no," briefly explain why:	

Section D: Performance Information (All Capital Assets)

In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures (indicators) must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.

Agencies must use the following table to report performance goals and measures for the major investment and use the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM). Map all Measurement Indicators to the corresponding "Measurement Area" and "Measurement Grouping" identified in the PRM. There should be at least one Measurement Indicator for each of the four different Measurement Areas (for each fiscal year). The PRM is available at www.egov.gov. The table can be extended to include performance measures for years beyond FY 2009.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
2007	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.0 (out of 7.0)	Achieve user satisfaction score >= 5.25. Baseline score remains identical; NERSC improves annually by addressing low scoring items (5.0 or lower). The systems and applications the survey covers change as major new systems and software upgrades are im	6.31 for the survey results published January 2007. Actual score will be available 2QFY08
2007	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	Number of Computation Resource Hours (CRH's) delivered	Provide 95 Million CRHs for allocation	Deliver >= 95 Million CRHs	As of August 23, 2007, NERSC has delivered 96.9 Million CRHs.

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	primacy.							
2007	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Productivity and Efficiency	Productivity	Queue Throughput metric	Implement a job throughput/productivity metric. Note the ASCR Advisory Committee is currently reviewing and will recommend metrics NERSC will incorporate ASCAC input in the final metric implemented by NERSC	ASCR Advisory Committee recommended NERSC not have a single throughput metric due to the complexity of the job mix.	N/A
2007	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability	Parallel Systems Scheduled Availability	Parallel computational systems scheduled availability is at least 95% for systems after 24 months of production operation	Maintain major systems one year old or less at 90%, major systems between one and two years at 93%, and major systems more than two years at 95%.	Availability through May 2007: 97.0%. Actual availability will be available 1QFY08.
2008	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2008	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2008	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	primacy.							
2008	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2008	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy				
2008	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2009	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2009	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Customer Results	Customer Benefit	Customer Satisfaction				

Performance Information Table								
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	primacy.							
2009	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2009	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2009	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy				
2009	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2010	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Customer Results	Customer Benefit	Customer Satisfaction				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	primacy.							
2010	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2010	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2010	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2010	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy				
2010	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Technology	Reliability and Availability	Availability				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	primacy.							
2011	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2011	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2011	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2011	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2011	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Processes and Activities	Security and Privacy	Privacy				

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	primacy.							
2011	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2012	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2012	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2012	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2012	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	primacy.							
2012	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Security				
2012	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2013	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2013	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction				
2013	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	primacy.							
2013	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2013	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Security				
2013	GOAL 3.2 Foundations of Science – Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				

Section E: Security and Privacy (IT Capital Assets only)

In order to successfully address this area of the business case, each question below must be answered at the system/application level, not at a program or agency level. Systems supporting this investment on the planning and operational systems security tables should match the systems on the privacy table below. Systems on the Operational Security Table must be included on your agency FISMA system inventory and should be easily referenced in the inventory (i.e., should use the same name or identifier).

For existing Mixed-Life Cycle investments where enhancement, development, and/or modernization is planned, include the investment in both the "Systems in Planning" table (Table 3) and the "Operational Systems" table (Table 4). Systems which are already operational, but have enhancement, development, and/or modernization activity, should be included in both Table 3 and Table 4. Table 3 should reflect the planned date for the system changes to be complete and operational, and the planned date for the associated C&A update. Table 4 should reflect the current status of the requirements listed. In this context, information contained within Table 3 should characterize what updates to testing and documentation will occur before implementing the enhancements; and Table 4 should characterize the current state of the materials associated with the existing system.

All systems listed in the two security tables should be identified in the privacy table. The list of systems in the "Name of System" column of the privacy table (Table 8) should match the systems listed in columns titled "Name of System" in the security tables (Tables 3 and 4). For the Privacy table, it is possible that there may not be a one-to-one ratio between the list of systems and the related privacy documents. For example, one PIA could cover multiple systems. If this is the case, a working link to the PIA may be listed in column (d) of the privacy table more than once (for each system covered by the PIA).

The questions asking whether there is a PIA which covers the system and whether a SORN is required for the system are discrete from the narrative fields. The narrative column provides an opportunity for free text explanation why a working link is not provided. For example, a SORN may be required for the system, but the system is not yet operational. In this circumstance, answer "yes" for column (e) and in the narrative in column (f), explain that because the system is not operational the SORN is not yet required to be published.

Please respond to the questions below and verify the system owner took the following actions:

1. Have the IT security costs for the system(s) been identified and integrated into the overall costs of the investment:

a. If "yes," provide the "Percentage IT Security" for the budget year:

2. Is identifying and assessing security and privacy risks a part of the overall risk management effort for each system supporting or part of this investment.

3. Systems in Planning and Undergoing Enhancement(s), Development, and/or Modernization - Security Table(s):			
Name of System	**Agency/ or Contractor Operated System?**	**Planned Operational Date**	**Date of Planned C&A update (for existing mixed life cycle systems) or Planned Completion Date (for new systems)**
SC LBNL NERSC/NERSC 5			
SC LBNL NERSC/NERSC 6			
SC LBNL NERSC/NERSC 7			
SC LBNL NERSC/NERSC 8			

4. Operational Systems - Security Table:							
Name of System	**Agency/ or Contractor Operated System?**	**NIST FIPS 199 Risk Impact level (High, Moderate, Low)**	**Has C&A been Completed, using NIST 800-37? (Y/N)**	**Date Completed: C&A**	**What standards were used for the Security Controls tests? (FIPS 200/NIST 800-53, NIST 800-26, Other, N/A)**	**Date Complete(d): Security Control Testing**	**Date the contingency plan tested**
SC LBNL NERSC Enclave							

5. Have any weaknesses, not yet remediated, related to any of the systems part of or supporting this investment been identified by the agency or IG?

a. If "yes," have those weaknesses been incorporated into the agency's plan of action and milestone process?

6. Indicate whether an increase in IT security funding is requested to remediate IT security weaknesses?

a. If "yes," specify the amount, provide a general description of the weakness, and explain how the funding request will remediate the weakness.

7. How are contractor security procedures monitored, verified, and validated by the agency for the contractor systems above?

8. Planning & Operational Systems - Privacy Table:					
(a) Name of System	**(b) Is this a new system? (Y/N)**	**(c) Is there at least one Privacy Impact Assessment (PIA) which covers this system? (Y/N)**	**(d) Internet Link or Explanation**	**(e) Is a System of Records Notice (SORN) required for this system? (Y/N)**	**(f) Internet Link or Explanation**
SC LBNL NERSC Enclave	No	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records
SC LBNL NERSC/NERSC 5	Yes	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records
SC LBNL NERSC/NERSC 6	Yes	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records
SC LBNL NERSC/NERSC 7	Yes	No	No, because the system does not contain, process, or transmit personal identifying	No	The system is not a privacy system of records

8. Planning & Operational Systems - Privacy Table:

(a) Name of System	(b) Is this a new system? (Y/N)	(c) Is there at least one Privacy Impact Assessment (PIA) which covers this system? (Y/N)	(d) Internet Link or Explanation	(e) Is a System of Records Notice (SORN) required for this system? (Y/N)	(f) Internet Link or Explanation
			information.		
SC LBNL NERSC/NERSC 8	Yes	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records

Details for Text Options:
Column (d): If yes to (c), provide the link(s) to the publicly posted PIA(s) with which this system is associated. If no to (c), provide an explanation why the PIA has not been publicly posted or why the PIA has not been conducted.

Column (f): If yes to (e), provide the link(s) to where the current and up to date SORN(s) is published in the federal register. If no to (e), provide an explanation why the SORN has not been published or why there isn't a current and up to date SORN.

Note: Working links must be provided to specific documents not general privacy websites. Non-working links will be considered as a blank field.

Section F: Enterprise Architecture (EA) (IT Capital Assets only)

In order to successfully address this area of the capital asset plan and business case, the investment must be included in the agency's EA and Capital Planning and Investment Control (CPIC) process and mapped to and supporting the FEA. The business case must demonstrate the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.

1. Is this investment included in your agency's target enterprise architecture?	Yes
a. If "no," please explain why?	
2. Is this investment included in the agency's EA Transition Strategy?	Yes
a. If "yes," provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.	Office of Science LBNL National Energy Research Scientific Computing Center (SC LBNL NERSC) found in EA Transition Plan section 2.1.4.1 Core Mission - Scientific Research
b. If "no," please explain why?	
3. Is this investment identified in a completed (contains a target architecture) and approved segment architecture?	No
a. If "yes," provide the name of the segment architecture as provided in the agency's most recent annual EA Assessment.	

4. Service Component Reference Model (SRM) Table:
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to http://www.egov.gov.

Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
Data Warehouse	Resources to support archiving and retrieval of large volumes of data.	Back Office Services	Data Management	Data Warehouse	Software Development		Internal	
Data Mining	Provide for the efficient discovery of non-obvious, valuable patterns and relationships within a large collection of data	Business Analytical Services	Knowledge Discovery	Data Mining	Data Warehouse		Internal	
Simulation	Utilize models to mimic real-world processes.	Business Analytical Services	Knowledge Discovery	Simulation	Software Development		Internal	
Multimedia	Support the representation of information in more than one form to include text,	Business Analytical Services	Visualization	Multimedia	Graphing / Charting		Internal	

4. Service Component Reference Model (SRM) Table:
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to http://www.egov.gov.

Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
	audio, graphics, animated graphics and full motion video.							
Program / Project Management	Manage and control a particular effort of an organization	Business Management Services	Management of Processes	Program / Project Management	Program / Project Management		Internal	
Self-Service	Allow an organization's customers to sign up for a particular service at their own initiative.	Customer Services	Customer Initiated Assistance	Self-Service	Customer / Account Management		Internal	
System Resource Monitoring	Support the balance and allocation of memory, usage, disk space and performance on computers and their applications.	Support Services	Systems Management	System Resource Monitoring	System Resource Monitoring		Internal	

a. Use existing SRM Components or identify as "NEW". A "NEW" component is one not already identified as a service component in the FEA SRM.

b. A reused component is one being funded by another investment, but being used by this investment. Rather than answer yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.

c. 'Internal' reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. 'External' reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.

d. Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the percentage of the BY requested funding amount transferred to another agency to pay for the service. The percentages in the column can, but are not required to, add up to 100%.

5. Technical Reference Model (TRM) Table:
To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Simulation	Component Framework	Business Logic	Platform Independent	
Simulation	Component Framework	Business Logic	Platform Independent	
Simulation	Component Framework	Business Logic	Platform Independent	
Simulation	Component Framework	Business Logic	Platform Independent	
System Resource Monitoring	Component Framework	Data Management	Reporting and Analysis	
System Resource Monitoring	Component Framework	Data Management	Reporting and Analysis	
Multimedia	Component Framework	Presentation / Interface	Content Rendering	
Self-Service	Component Framework	Presentation / Interface	Dynamic Server-Side Display	
Self-Service	Service Access and Delivery	Access Channels	Collaboration / Communications	
Program / Project Management	Service Access and Delivery	Access Channels	Collaboration / Communications	
System Resource Monitoring	Service Access and Delivery	Service Requirements	Hosting	
Program / Project Management	Service Access and Delivery	Service Requirements	Hosting	
Data Warehouse	Service Access and Delivery	Service Transport	Service Transport	
Identification and Authentication	Service Access and Delivery	Service Transport	Supporting Network Services	

5. Technical Reference Model (TRM) Table:
To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Data Mining	Service Platform and Infrastructure	Database / Storage	Database	
Data Warehouse	Service Platform and Infrastructure	Database / Storage	Storage	
Data Mining	Service Platform and Infrastructure	Database / Storage	Storage	
Self-Service	Service Platform and Infrastructure	Delivery Servers	Web Servers	
Data Mining	Service Platform and Infrastructure	Hardware / Infrastructure	Local Area Network (LAN)	
Simulation	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	
Simulation	Service Platform and Infrastructure	Support Platforms	Platform Dependent	
Simulation	Service Platform and Infrastructure	Support Platforms	Platform Independent	

a. Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications

b. In the Service Specification field, agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.

6. Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc)? No

a. If "yes," please describe.

This project leverages other Government investments across agencies, such as the DOE ESnet and other federal networking investments. It leverages other existing DOE-SC National Laboratory investments, such as DOE-SC LCF sites at ORNL and ANL, to collaborate in scientific research projects. The project also has benefited from technology first introduced at scale in the NNSA ASC program. This investment does not have a requirement or need for applications such as FirstGov, Pay.Gov, etc. NERSC is a vanguard, high-end scientific computing facility and as such, is not interconnected with federal business systems.

Exhibit 300: Part II: Planning, Acquisition and Performance Information

Section A: Alternatives Analysis (All Capital Assets)

Part II should be completed only for investments identified as "Planning" or "Full Acquisition," or "Mixed Life-Cycle" investments in response to Question 6 in Part I, Section A above.

In selecting the best capital asset, you should identify and consider at least three viable alternatives, in addition to the current baseline, i.e., the status quo. Use OMB Circular A-94 for all investments and the Clinger Cohen Act of 1996 for IT investments to determine the criteria you should use in your Benefit/Cost Analysis.

1. Did you conduct an alternatives analysis for this project? Yes

a. If "yes," provide the date the analysis was completed? 7/6/2007

b. If "no," what is the anticipated date this analysis will be completed?

c. If no analysis is planned, please briefly explain why:

2. Alternative Analysis Results: * Costs in millions

Use the results of your alternatives analysis to complete the following table:

Alternative Analyzed	Description of Alternative	Risk Adjusted Lifecycle Costs estimate	Risk Adjusted Lifecycle Benefits estimate
0			
1			
2			
3			

3. Which alternative was selected by the Agency's Executive/Investment Committee and why was it chosen?

The baseline alternative 0 is to make no more enhancements to the system. The alternative chosen is Flagship Center NERSC for several reasons. First, it provides the needed computation research hours (CRHs) in the time frame necessary to meet the performance gap described in the business case, section I.A.8. Secondly, it allows for economies of scale to be achieved in terms of staff and hardware which is reflected in a higher net present value. Finally, it provides one large system, which gives DOE the capability to support large parallel applications needed for large scale science, core to DOE's mission. The other options, including the status quo, fall short in delivering the required capability in the 5-year planning horizon or cost far more then the alternative chosen. Conclusively, the Flagship Center (alternative 1) is the most effective solution to provide the benefits measured in the performance Section I.D. Total Project Cost for this investments lifecycle is the total DME ($15.528M)

Note: Costs and benefits in this section are discounted to reflect the cost of money and are not meant to be a budget request as identified in the summary of spending.

4. What specific qualitative benefits will be realized?

The alternative chosen is Flagship Center NERSC as this alternative provides the benefits that are measured in Section I.D. While this alternative provides the greatest benefit for the least cost, this alternative allows DOE to support large parallel capability applications that would not be possible with smaller distributed systems. Also, with a full dedicated NERSC staff, early assessment and introduction of new technology and development and deployment of specialized software would be part of the services offered to the DOE science community as well as enhanced and more comprehensive cyber security. Finally, as part of achieving economies of scale, NERSC increases its purchasing power with the higher scale purchases.

5. Will the selected alternative replace a legacy system in-part or in-whole? No

a. If "yes," are the migration costs associated with the migration to the selected alternative included in this investment, the legacy investment, or in a separate migration investment.

b. If "yes," please provide the following information:

List of Legacy Investment or Systems		
Name of the Legacy Investment of Systems	**UPI if available**	**Date of the System Retirement**

Section B: Risk Management (All Capital Assets)

You should have performed a risk assessment during the early planning and initial concept phase of this investment's life-cycle, developed a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.

1. Does the investment have a Risk Management Plan? Yes

a. If "yes," what is the date of the plan? 8/14/2007

b. Has the Risk Management Plan been significantly changed since last year's submission to OMB? Yes

c. If "yes," describe any significant changes:

The Risk Management Plan has been updated using NIST Special Publication 800-30: Risk Management Guide for Information Technology Systems. Risk categories considered include 1) Technical, 2) Project management, 3) Organizational, 4) Financial, 5) External, and 6) Compliance. The updated plan considers the latest high performance computing systems being planned and installed at NERSC, the potential and capability of producing and procuring such systems and the risks associated with testing and placing them into production.

2. If there currently is no plan, will a plan be developed?

a. If "yes," what is the planned completion date?

b. If "no," what is the strategy for managing the risks?

3. Briefly describe how investment risks are reflected in the life cycle cost estimate and investment schedule:

Lifecycle risks are mitigated through procuring integrated solutions that include software, hardware and maintenance through a rigorous procurement process that incorporate initial and lifecycle performance benchmarks which include actual scientific codes representative of the NERSC workload. Large scale computational systems go through factory testing and extensive acceptance testing. The NERSC Program stages major systems so that NERSC will always have at least one major system in production while new systems are installed and vetted. Mature systems have options to extend their lifecycle if needed to cover new system delays. Infrastructure improvements are coordinated so that the science community can make effective use of the major systems. All systems are effectively managed for performance, functionality and security to ensure that scientific users have reliable computational resources that meet their needs. By managing risk mitigation, NERSC will achieve the risk adjusted life cycle cost estimate.

Section C: Cost and Schedule Performance (All Capital Assets)

EVM is required only on DME portions of investments. For mixed lifecycle investments, O&M milestones should still be included in the table (Comparison of Initial Baseline and Current Approved Baseline). This table should accurately reflect the milestones in the initial baseline, as well as milestones in the current baseline.

1. Does the earned value management system meet the criteria in ANSI/EIA Standard-748? Yes

2. Is the CV% or SV% greater than +/- 10%? (CV%= CV/EV x 100; SV%= SV/PV x 100) No

a. If "yes," was it the CV or SV or both?

b. If "yes," explain the causes of the variance:

The current cost for this project is 43% below planned cost because a) the evaluation period took less effort than planned, and b) the contract negotiation period took less effort than expected.

c. If "yes," describe the corrective actions:

Since this effort is currently 43% below planned cost, no corrective action is planned.

3. Has the investment re-baselined during the past fiscal year? No

a. If "yes," when was it approved by the agency head?

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
1	FY04-FY05 SS Operations and Maintenance	9/30/2005	$70.232	9/30/2005	9/30/2005	$69.076	$69.076	0	$0	100%
2	FY04-FY05 DME NERSC-5 Activities Subject to Earned Value Management under DOE CIO Guidelines	9/30/2005	$0.504	9/30/2005	9/30/2005	$0.498	$0.498	0	$0	100%
3	FY06 SS Program Management	12/31/2005	$0.273	12/31/2005	12/31/2005	$0.3	$0.3	0	$0	100%
4	FY06 DME Lease to Own Payments	12/31/2005	$1.381	12/31/2005	12/31/2005	$1.381	$1.381	0	$0	100%
5	FY06 SS Maintenance Operations	12/31/2005	$3.66	12/31/2005	12/31/2005	$3.747	$3.747	0	$0	100%
6	FY06 SS Maintenance Operations	3/31/2006	$0.294	3/31/2006	3/31/2006	$0.301	$0.301	0	$0	100%
7	FY06 DME Lease to Own Payments	3/31/2006	$1.381	3/31/2006	3/31/2006	$1.381	$1.381	0	$0	100%
8	FY06 SS Program Management	3/31/2006	$7.338	3/31/2006	3/31/2006	$7.4	$7.4	0	$0	100%
9	FY06 SS Maintenance Operations	6/30/2006	$0.3	6/30/2006	6/30/2006	$0.289	$0.289	0	$0	100%
10	FY06 DME Lease to Own Payments	6/30/2006	$1.381	6/30/2006	6/30/2006	$1.381	$1.381	0	$0	100%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
11	FY06 SS Program Management	6/30/2006	$5.225	6/30/2006	6/30/2006	$4.233	$4.233	0	$0	100%
12	FY06 SS Program Management	9/30/2006	$0.29	9/30/2006	9/30/2006	$0.286	$0.286	0	$0	100%
13	FY06 DME Lease to Own Payments	9/30/2006	$1.333	9/30/2006	9/30/2006	$1.293	$1.293	0	$0	100%
14	FY06 SS Maintenance Operations	9/30/2006	$8.772	9/30/2006	9/30/2006	$8.863	$8.863	0	$0	100%
15	FY06 DME NERSC-5 Activities Subject to Earned Value Management under DOE CIO Guidelines	9/30/2006	$5.663	9/30/2006	9/30/2006	$5.663	$5.663	0	$0	100%
16	FY07 SS Vendor Maintenance and Lease Payments	9/30/2007	$24.086	9/30/2007		$12.84				0%
17	FY07 SS Contractor Management and Oversight	9/30/2007	$1.05	9/30/2007		$0.65				0%
18	FY07 SS Facility Services and Infrastructure	9/30/2007	$27.541	9/30/2007		$20.176				0%
19	FY07 SS Internal Security Review	9/30/2007	$2.308	9/30/2007		$1.125				0%
20	FY07 DME NERSC-5 and NERSC-6 Activities	9/30/2007	$0.804	9/30/2007		$4.732				0%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
	Subject to Earned Value Management under DOE CIO Guidelines									
21	FY07 SS Facility Subsystem Balance	9/30/2007	$0	9/30/2007		$0.1				0%