FINDING OF NO SIGNIFICANT IMPACT
FOR
LINAC COHERENT LIGHT SOURCE-II PROJECT
SLAC NATIONAL ACCELERATOR LABORATORY

AGENCY: U. S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The U. S. Department of Energy (DOE) has completed an Environmental Assessment (DOE/EA-1904) on a project to expand the existing Linac Coherent Light Source (LCLS) facility at the SLAC National Accelerator Laboratory (SLAC).

One of SLAC's major scientific facilities is the LCLS, the world's first hard X-ray free electron laser. The LCLS X-ray laser beams enable the simultaneous investigation of a material's electronic and structural properties on the size (sub-nanometer) and time (femto-second) scales that determine their function. Research programs at SLAC include materials science, catalytic sciences, structural molecular biology, and molecular environmental sciences. The LCLS-I and other facilities at SLAC are considered "user" facilities because they are made available to researchers at SLAC as well as students and scientists from universities, industry, foreign institutions and other national laboratories.

The LCLS-II project would expand SLAC's technical experimental capabilities by extending the photon energy range, increasing control over the photon pulses and enabling two-color pump-probe experiments. Two-color pump-probe experiments serve to understand transient excited states that lie at the heart of chemical and biological reactivity and function. In addition, LCLS-II would increase the number of users or researchers that can access the LCLS facilities and allow SLAC to supply experimental stations with hard and soft X-rays at the same time.

BACKGROUND: The purpose of LCLS-I was the creation of a new type of X-ray light source from a single-pass free electron laser, and provision of upgraded capabilities to study the basic properties of matter for advancements in the fields of quantum mechanics and molecular and plasma physics, as well as in the fields of chemistry and biology. LCLS-I allows scientists to examine matter at the atomic level, including evaluation of minute changes with time. The LCLS-I free electron laser produces X-ray laser pulses that are billions of times more intense than those produced from previously existing sources.

SLAC now has new scientific research needs that derive from the success of operating LCLS-I. Starting with the first experiments in the fall of 2009, the demand for LCLS-I beam time has exceeded the available beam-time by more than four to one. While there is capacity in the existing undulator hall to add another X-ray source, there is inadequate room for the addition of new instruments. The proposed action would allow researchers to conduct operations in one undulator hall and the associated experimental hall, while maintenance and upgrades are carried out in the other hall. The proposed action would allow expansion to keep pace with the growth in research demand.

PURPOSE AND NEED: The purpose of the DOE action is to add facility capacity and expand experimental capabilities to include: 1) extension to harder X-rays for the study of thick three-dimensional materials with increased X-ray penetration and spatial resolution, 2) extended soft X-ray spectral range for the study of chemical transformations of key carbon-based molecular complexes, 3) creation of transform-limited X-ray pulses, and 4) availability of linear and circular polarization for the separation of charge and spin effects in materials.

The Proposed Action would continue to support the DOE Office of Science mission, which has identified the need for a new or upgraded X-ray free electron laser facility that would provide enhanced temporal resolution, coherence and brightness. Without increased capacity, access to these new capabilities would be severely limited, which would adversely affect SLAC's ability to fulfill its research mission and maintain a global leadership role in X-ray free electron laser research. The Proposed Action would provide an increase in both experimental capability and capacity beginning in 2018 and into the subsequent decade, and would allow SLAC to continue its global leading role as the free-electron laser research center with the most powerful X-ray laser facilities and the highest potential to achieve scientific breakthroughs in the fields of energy, environment, health and technology.

DESCRIPTION OF THE PROPOSED ACTION: The proposed LCLS-II project is comprised of the construction, installation, operation and decommissioning of the following: 1) new tunnel for a hard X-ray undulator source (2-13 keV) and a soft X-ray undulator source (250-2,000 eV); 2) dedicated, independent electron source for these new undulators, utilizing Sectors 10-20 of the existing SLAC linac; 3) new experimental hall capable of accommodating multiple experimental stations; 4) modifications to existing SLAC facilities for the injector and new shielded enclosures for the undulator sources, beam dumps and X-ray front ends; 5) potentially relocating the two soft x-ray instruments from the existing Near Experimental Hall to the new experimental hall. The proposed LCLS-II project will have sufficient capacity to allow for the installation of future undulator sources and experimental stations within the existing experimental hall and routine upgrades of utilities.

ALTERNATIVES CONSIDERED: In addition to the Proposed Action, DOE considered the no-action alternative as required under NEPA. Under the no-action alternative, DOE assumed that the proposed project would not be constructed. DOE also considered three other alternatives that were eliminated from further detailed analysis in the EA because they either did not meet the purpose or mission need, or would be cost prohibitive and therefore, infeasible.

ENVIRONMENTAL CONSEQUENCES: DOE evaluated the potential environmental consequences of the proposed project and the no-action alternative. DOE considered eleven environmental resource areas: air quality, biological resources, cultural resources, geology and soils, health and safety, hydrology and water quality, noise, socioeconomics and environmental justice, traffic, waste management and cumulative effects. DOE determined that either there would be no impacts or the potential impacts would be minor, short-term or both.

The proposed project would be located in the San Francisco Bay Area Air Basin, which is a non-attainment area for the criteria pollutants ozone and particulate matter. Air quality impacts from construction would be intermittent and short-term, and emissions would not exceed either the *de minimus* levels for conformity of each criteria pollutant in non-attainment, or emission limits established in SLAC's Synthetic Minor Operating Permit (SMOP) issued by the Bay Area Air

Quality Management District. Air emissions associated with the daily operations would result from an increase in energy, water and vehicle use, however, air emissions would not exceed the *de minimus* levels or SLAC's permit limits for volatile organics, nitrogen oxides and particulate matter.

The Proposed Action is located adjacent to the existing LCLS-I facility in a location that has either been previously disturbed or is surrounded by previously developed areas of the site. Construction activities would not have any effects on urban/industrial areas; however, there would be minor impacts due to the permanent loss of some grassland. There are no wetlands, fisheries, streams, ponds, or other aquatic habitats on the proposed project site and no critical habitats for sensitive species are present within the SLAC boundary. Construction and operations associated with the Proposed Action would occur within the footprint of urban/industrial facilities and would not affect wetlands, aquatic habitats and fisheries, and would result in only minor local impacts to vegetation and wildlife.

The main construction area for the Proposed Action would be limited to the eastern end of the project and located over one mile from habitat known to support the California red-legged frog (CRLF). Activities occurring west of Interstate I-280 would occur within existing buildings and tunnels, with the exception of the replacement of the existing alcove at Sector 10 of the linac to install the injector support building and electrical substation. The construction activities for this Sector 10 work would occur adjacent to the Klystron Gallery on its north side and would extend the footprint of the existing alcove by 20 feet in length and keep the same width. Therefore, DOE does not anticipate any impacts to habitat or migration routes of CRLF. The existing above ground accelerator housing structure provides a physical barrier that may inhibit some wildlife dispersal because it lies between the Jasper Ridge Biological Preserve and undeveloped land to the north.

While the grassland habitat to the north and south of the proposed construction area could provide upland, aestivation, dispersal and migratory habitat, the closest known occurrences of the CLRF are over one mile from the proposed construction site and the linear accelerator, Interstate 280, a major equestrian facility, the SLAC property and its associated roadways and industrial areas pose substantial physical barriers to CRLF migration. There are no ponds or other suitable breeding habitat on the SLAC property and the CRLF would not be expected to traverse the SLAC area. The Proposed Action would not create additional barriers to CRLF migration or dispersal as construction of facilities would either be located underground or adjacent to existing experimental facilities. Therefore, no direct impacts to the CRLF are expected.

Western pond turtle (WPT) are known to occur in San Francisquito Creek; however, no permanent sources of water or ponds exist within the LCLS-II project area. San Francisquito Creek, the closest suitable off-site habitat for the WPT, is located approximately 1,200 feet from the project area at its closest distance. Given the distance from known habitat and the presence of physical barriers between that the project area and the creek, including Alpine Road and residential housing, WPT are very unlikely to occur within the project area. Therefore, the proposed project would not result in direct effects on the WPT.

Potential indirect effects to the WPT and other species could occur during earth moving activities if soil erosion occurs in the construction area and affects water quality in San Francisquito Creek

or its tributaries, including drainages IR-6 and IR-8. SLAC would be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP would identify specific storm water best management practices (BMPs) to reduce the potential for water quality degradation during construction. Compliance with the SWPPP and storm water regulations would adequately reduce the potential for indirect impacts on the CRLF and the WPT.

Previous archeological investigations by Stanford University identified two lithic scatter sites south of the Proposed Action area within the SLAC boundary. There are no Indian Trust Assets within or near the affected environment. LCLS-II construction activities would have a potential minor impact on the lithic scatter site adjacent to the proposed location of the experimental hall.

DOE received a letter, dated November 17, 2011, documenting formal concurrence from the State Historic Preservation Office (SHPO) on the National Historic Preservation Act Section 106 consultation required for the proposed installation of the drive laser for the LCLS-II X-ray Laser within the proposed Injector Support Alcove in Sector 10 of the Klystron Gallery. The Section 106 consultation with the SHPO was required as this portion of the proposed LCLS-II project is located within the proposed Historic District boundary.

During construction of the proposed project, short-term impacts from excavation and grading activities would include the potential for soil erosion and sediment transport from the project site. Appropriate soil erosion control measures, such as the use of BMPs to divert runoff from exposed soil surfaces, re-vegetating disturbed areas, and other measures will be implemented. The use of BMPs and implementation of a construction site SWPPP would assure that impacts on soils would be minor and short-term. Operations would not result in any incremental impacts beyond those associated with routine facility and grounds maintenance activities.

The potential construction-related health and safety impacts would be limited to areas within the SLAC site boundary. While there would be an increase in off-site truck traffic from import of construction materials and off-site waste disposal, any risk of accidents would be minimized by implementing avoidance and minimization measures, including preparing and implementing traffic control plan for the project. Therefore, any vehicle-related health and safety impacts of the Proposed Action to the public would be minor and short term.

Potential hazards associated with construction activities, including excavation, heavy equipment use, high voltage, traffic, dust, fumes and noise are addressed through existing SLAC health and safety program requirements, engineering and/or administrative controls, and use of appropriate personal protective equipment. All areas accessible to workers would be routinely monitored by DOE, SLAC and subcontractor personnel and appropriate signs would be posted. These hazard controls and implementation of other health and safety requirements applicable to the Proposed Action would reduce the potential for construction-related accidents and injuries.

Potential on-site employee and general worker health and safety hazards associated with the Proposed Action include heavy equipment use, material handling/rigging, excavation and tunneling. Potential hazards associated with the use of hazardous materials during construction would be avoided or minimized by: conducting task-specific hazard analyses; delineating and establishing project boundaries and barriers; implementing existing site and project health and safety programs, policies, procedures and worker training; and conducting routine inspections.

Existing health and safety programs and policies and procedures already in place at SLAC include measures to protect workers and residents from construction hazards and potential exposure to chemicals and radionuclides in soil, therefore, construction of the proposed project would result in only minor risks of impacts to worker health and safety. Potential hazards for SLAC employees and other site workers associated with routine operations include fire, electric shock, and exposure to hazardous materials, seismic risks and other adverse effects from the environment. These potential hazards are addressed in existing site health and safety programs, policies and procedures.

Other potential health and safety impacts could result from accidents and malevolent acts from internal or external sources. The most serious radiation accident that could occur during operations would be the total loss of the injector beam at the maximum possible current and energy. This exposure, however, would last for only a fraction of a second before the beam would shut down, thereby producing a negligible radiation dose compared to the DOE dose limit of 100 mrem/year. To minimize the potential for malevolent acts, SLAC has assessed potential risks and implemented site security countermeasures, therefore, impacts from accidents or malevolent acts and any radiation releases would have only minor health and safety impact on SLAC workers and area residents.

During construction, there would be no potential exposure to radiation as no radioactive components or radionuclides would be used to construct the proposed project. Potential hazards associated with ionizing and non-ionizing radiation exposure during operations is minimized through design and engineering measures such as electron beam dumps and thick concrete walls used for shielding, and use of administrative controls and personal protective equipment. Radioactivity in air, soil, groundwater and wastewater, and modeled doses based on constant presence on site, does not result in significant human health risk from radiation beyond naturally occurring levels. Measurements of direct radiation at locations along the site boundary and calculations of collective dose to the surrounding population from ongoing operations have historically been well below naturally occurring background levels and comply with DOE and Environmental Protection Agency requirements for direct radiation and airborne radioactivity. The Proposed Action would provide an additional source of radiation; however, given the design and engineering measures referenced above, off-site radiation exposure would continue to remain much lower than the naturally occurring background levels. Similarly, any exposure of biological resources would be below exposure standards and, therefore, any impacts from the Proposed Action would be minor.

To address potential surface water quality impacts associated with construction, trenching, grading and stockpiling activities, SLAC would obtain a General Permit for Discharges of Storm Water Associated with Construction Activity. The permit requires the development and implementation of a construction Stormwater Pollution Prevention Plan (SWPPP), which includes project-specific BMPs, a visual monitoring program, and a chemical monitoring program, if necessary. The construction SWPPP would focus on preventing sediment from reaching storm drains and San Francisquito Creek through implementation of BMPs for management of disturbed soil and excavated material, and use of secondary containment and drip pans for temporary storage of chemicals and heavy and oil-filled equipment. Therefore, potential water quality impacts from the accidental release of hazardous materials would not likely occur. Operations would have minor effects on stormwater quality. Additional vehicles may contribute increases in oil and fuel use, as is the case in any parking lot or roadway;

however, runoff from all parking areas at SLAC are managed through BMPs as required by the site-wide SWPPP.

The proposed Action would be constructed largely within the footprint of existing facilities and would use existing disturbed or paved areas for staging and construction would result in approximately two percent increase in impervious surfaces on site. The Proposed Action would comply with existing stormwater regulations and would allow percolation of stormwater in detention basins or implementation of other BMPs. Therefore, the proposed project would have no impact on flooding. SLAC's wastewater discharges are regulated under Mandatory Wastewater Discharge Permit No. WB061216 issued by the South Bayside System Authority and the West Bay Sanitary Sewer District and compliance with this discharge permit requirements for operational discharges from the project would result in no impacts.

Groundwater quality would not be impacted by construction of the Proposed Action. The depth to groundwater is below the construction activities in the Research Yard and impacts on groundwater flow would be temporary and localized. Potential impact on groundwater quality would be addressed through implementation of pollution prevention BMPs described above. Groundwater quality would not be affected by operation of the Proposed Action. Chemical use during operations would be in small quantities and indoors and would have only minor potential impacts on groundwater.

Construction would require the use of heavy equipment including excavators, loaders and haul trucks. To minimize nighttime noise impacts and comply with the City of Menlo Park's noise standards, the construction contractor would conduct heavy excavation activities during the day. After the tunnel entrance is created, the majority of excavation would occur within the tunnel and would proceed during both day and night. Construction noise within the tunnel, however, would be attenuated by the tunnel walls. During construction, the use of heavy equipment including road headers, excavators, dump trucks, backhoes, compactors, and other vibration-intensive equipment would generate ground-borne vibration, however, vibration levels at all selected off-site receptors would be minimal.

During operations, the Proposed Action would increase the number of employees and users of the site from approximately 1,900 now to approximately 1,950 to 1,960 in the future. This increase would be inconsequential and is approximately equal to the fluctuation in the number of SLAC employees over a year (60 to 100 people) resulting from shutdowns, construction activities and temporary labor. The projected increase would result in a small increase in traffic-related noise levels, which would likely be below detection at the locations of sensitive receptors, therefore, any operational effects from the Proposed Action on traffic noise would be minor.

The Proposed Action would have negligible, if any, impacts on the population or demographics of the area of study. Construction of the proposed project would require, at its peak, no more than approximately 130 construction workers per day. The construction employment needs of the Proposed Action could easily be met with local resources and therefore, there would be no in-migration of workers to meet the construction labor demands of the project, and no impacts on the population or demographics or to the local housing market. The size and duration of the Proposed Action is not sufficiently large to increase the costs for labor or materials in the region, and thus would not present the risk of negative economic impacts. Ongoing operations would have no impacts on the population or demographics of the area of study as no additional

employees would be hired and operations of the Proposed Action would not result in any in-migration of individuals to the area. There would be no indirect or induced economic effects generated from the earning and spending of new employees and no impact on local housing markets.

There would be no environmental or socioeconomic impacts as a result of the construction of the Proposed Action. Potential impacts such as noise and increased traffic would be addressed through impact avoidance and minimization measures. These impacts would be borne uniformly by the population as a whole; thus, there would be no disproportionate effects from construction to minority or low-income populations. There would be no major environmental or socioeconomic impacts as a result of the operations as any potential impacts would be mitigated as part of the Proposed Action, and these impacts would be borne uniformly by the population as a whole. Thus, there would be no disproportionate effects on minority or low-income populations.

Construction traffic typically would occur outside the normal commute peak periods. Minor disruption of traffic may occur when the trucks and other construction-related vehicles turn left into the site entrance from Alpine Road. However, this impact would be minor because entrance is restricted due to security, and construction-related vehicles would be staged and escorted. SLAC would establish procedures for inspecting and clearing vehicles through the gated entrance to prevent excessive queuing of construction vehicles and haul trucks. Construction-related traffic would use the Alpine Road entrance, which is used by only ten percent of campus traffic, and because construction traffic would occur outside the normal peak commuting hours, construction traffic impacts would be minor.

The proposed project would generate only a nominal amount of hazardous waste in the form of oily waste, but would generate substantial amounts of solid waste from demolition and excavation. However, solid waste disposal impacts on landfill capacity and operations would be minimized by recycling approximately 75 percent of the building demolition debris and by relocating excavated material on site. Through maximizing recycling and proper disposal of minor quantities of construction-generated hazardous waste, the Proposed Action would have a minor effect on waste management.

To construct the Proposed Action, an estimated 60,000 cubic yards of soil would require excavation and disposal at permitted commercial disposal facilities. The SLAC Excavation Clearance Program permitting process ensures proper screening, waste characterization and disposal of excavated soil and is intended to identify and minimize potential hazards associated with excavation work at SLAC. The quantities and types of waste streams generated from construction would have only a minor, short-term impact on waste generation. During excavation and construction, generation of hazardous materials would be limited to fuels and lubricants used for heavy equipment maintenance and fueling. Maintenance activities would occur in a designated area with appropriate controls to minimize the potential for overflows or spills. Construction of the Proposed Action may include limited use and storage of hazardous materials, such as paints, epoxies, fuels and lubricants, as well as lead for shielding purposes and would be handled in accordance with existing procedures. SLAC would minimize generation and disposal of solid waste by salvaging and recycling construction materials and demolition debris, such as concrete, clean soils, asphalt and wood. Therefore, the potential adverse impacts of generating these solid wastes would be short term and minor. Component manufacturing and

system installation may also produce hazardous wastes, such as used solvent from degreasing operations or spent cutting fluids. These wastes are routinely managed and controlled during ongoing operations at SLAC, in compliance with SLAC's existing policies and procedures for the management of hazardous materials and waste minimization.

During the operational phase of the LCLS-II, only minimal quantities of hazardous materials including paints, epoxies, solvents, oils and lead in the form of shielding would be used. Existing site-specific procedures for chemical storage, storage inspection and secondary containment are in place for the safe handling, storage and transport of hazardous materials. There would be little to no impact on hazardous materials handling, use or storage as a result of operation of the LCLS-II facility. Wastes expected to be generated as a result of LCLS-II operations would be similar to wastes generated at existing experimental facilities at SLAC. There would be minimal impact on hazardous waste generation during operation of the facility. Therefore, the Proposed Action would not result in any incremental impacts on hazardous materials and waste management beyond that resulting from previous or existing LCLS operations and impacts would be minor.

Cumulative effects were evaluated for air quality, biological resources, cultural resources, geology and soils, health and safety, hydrology and water quality, noise, socioeconomics and environmental justice, and waste management. The Proposed Action was below the *de minimis* levels for conformity with the approved State Implementation Plan as well as below SLAC's Synthetic Minor Operating Permit (SMOP) limits for each of the non-attainment criteria pollutants. Thus, the future cumulative air quality impacts would be minor. Operation of the proposed project would generate Greenhouse Gas (GHG) emissions from direct sources such as natural gas combustion and motor vehicles as well as indirect sources, such as water and wastewater use, waste generation, and electricity consumption. Based on a comparison with regional emissions data, the proposed project would result in emissions that would be a small percentage of the regional emissions, ranging from 0.008 to 0.2 percent. Therefore, the impact of emissions from the Proposed Action on regional air quality would be minor.

The Proposed Action would have a local, long-term, minor impact on vegetation. The grassland areas at SLAC are adjacent to existing industrial facilities and do not provide suitable habitat for special-status species and none have been observed at SLAC. After the other projects are completed, any disturbed grassland areas would be restored to preconstruction conditions. Therefore, the Proposed Action would have only minor cumulative effects on grasslands when considered together with other anticipated projects.

The Proposed Action would involve excavation and could affect undiscovered cultural resources. Any unanticipated discoveries during the LCLS-II project construction or other SLAC or Stanford University construction projects would be addressed through consultation with a qualified archaeologist. Construction of the Sector 10 Injector would involve demolition of facilities in the proposed Historic District and DOE has received formal concurrence on the NHPA Section 106 consultation package for the installation of the drive laser for LCLS-II X-ray laser and injector support alcove in Sector 10 from the SHPO in a letter, dated November 17, 2011. None of the other proposed SLAC projects would affect the proposed Historic District; therefore, no cumulative impacts would result. Excavation of the tunnel could result in impacts on paleontological resources. Any fossil discoveries on SLAC or other major excavations on other projects would be addressed through consultation with a qualified paleontologist and, with

minimization measures in place, only minor cumulative impacts would result. Short-term impacts on soils would occur, including increased risk of erosion due to vegetation removal, caused by the use of heavy equipment, however, these potential effects would be reduced through erosion control BMPs. Other SLAC and Stanford University projects would result in short-term impacts on geologic and soil resources from grading and road construction. These impacts would be reduced through BMPs and site restoration activities. Other projects would be subject to similar geologic and seismic engineering design and geotechnical measures as required by local and state building codes. Considered together with the cumulative projects, the Proposed Action alternative would have minor cumulative effects on soils and geology.

In conjunction with LCLS-I, the Proposed Action would have long-term minor impacts on worker health and safety by proportionately increasing potential sources of radiation and frequency of operation. However, these impacts would be managed through SLAC's existing health and safety programs and any cumulative effects would be minor. In addition, LCLS-I and the proposed project could have a cumulative beneficial effect on public health from breakthroughs related to health care, such as cancer treatments.

Because the Proposed Action would be constructed largely within the footprint of existing facilities and would comply with stormwater detention requirements, any increased runoff volume would be addressed through existing stormwater programs and would not increase the peak runoff rate. Therefore, any cumulative flooding impacts would be minor. In conjunction with other SLAC and Stanford University projects, and given implementation of the SWPPP and other BMPs, the Proposed Action would have only minor cumulative effects on water quality and any such impacts would be monitored and addressed according to state and local stormwater regulations. The Proposed Action would result in only minor, local groundwater impacts. Dewatering would have a minor local impact on groundwater and risks of contamination would be minimized through BMPs to prevent leaks and spills, and by the application of procedures documented in the SWPPP and Spill Prevention, Control, and Countermeasure plans. Other projects, including SLAC building renovations and Stanford University projects would use similar measures to minimize any impacts on groundwater. Considered together with these projects, the Proposed Action would have only minor cumulative impacts on groundwater.

During construction, the Proposed Action would generate noise from excavators at the tunnel and cavern site, as well as on the site access roads, from vehicles transporting workers, equipment and materials to and from the site. Noise modeling demonstrated that noise and vibration from construction equipment would not exceed applicable noise standards. Other projects at SLAC, including construction of research buildings and facility upgrades, could generate short-term, local noise impacts. Based on the schedule for other planned construction at SLAC, some projects would overlap with the Proposed Action. In addition to the nighttime construction associated with the Proposed Action, there would be limited nighttime construction attributable to other SLAC or Stanford University construction projects in the area. In addition, based on the noise analysis for individual noise sources, LCLS-II construction activities combined with LCLS-I operational noise (air handling systems) would not exceed the city of Menlo Park noise standards. Therefore, considered together, LCLS-I, other SLAC and Stanford University projects and the proposed LCLS-II project would have only minor cumulative noise impacts.

The proposed Action would result in short-term construction-related increases in traffic during demolition and waste disposition activities, and from delivery of construction equipment and materials. However, most worker traffic and deliveries would occur at off-peak times. Other projects in the area would not have substantial traffic impacts on roads affected by project construction. In the long term, other SLAC infrastructure upgrades would have no cumulative impacts because they would not overlap with the Proposed Actions's operational traffic. Other projects in the region would add truck trips on regional highways. Any cumulative impacts attributable to the Proposed Action would be minor considering the short-term construction effort and the relatively small number of trucks transporting material on and off-site. Because a relatively small volume of excavated material and demolition debris will be transported off-site for disposal, any cumulative traffic impacts on regional highways would be inconsequential.

NO ACTION ALTERNATIVE: Under the no-action alternative, DOE assumed that the Proposed Action would not be constructed. Existing facilities at SLAC would continue to operate under current management practices, and future research would be constrained to the capabilities and capacity of the existing facilities.

PUBLIC AVAILABILITY: DOE issued the draft EA on December 16, 2011 and advertised its availability in the *Menlo Park Almanac* that was published on December 21, 2011. DOE also made available a copy of the draft EA at the Menlo Park Library in Menlo Park, California. DOE transmitted copies of the Notice of Availability of the draft EA to the appropriate state and local regulatory agencies, Indian tribes and other interested stakeholders. On December 17, 2011, DOE transmitted the Notice of Availability of the draft EA and 15 electronic copies (CDs) to the State of California, Office of Planning and Research (OPR), which has responsibility for the distribution of environmental documents to the appropriate regulatory agencies. The State Clearinghouse of the State of California Office of Planning and Research distributed the draft EA document to the appropriate state and local agencies for their review. DOE also made the draft EA available on the SLAC NEPA website at http://www-group.slac.stanford.edu/esh/groups/ep/epg/nepa.htm and the DOE NEPA website at http://www.energy.gov/nepa/doe-nepa-documents.

DETERMINATION: Based on the findings of this EA, DOE has determined that the proposed action to construct, operate and decommission the proposed LCLS-II project does not constitute a major federal action that would significantly affect the quality of the human environment within the meaning of the National Environmental Policy Act, 42 U. S.C. 4321 et seq. Therefore, the preparation of an environmental impact statement is not required, and DOE is issuing this FONSI.

Issued in Menlo Park, California, this 7TH day of March 2012.

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