



## U.S. Department of Energy Categorical Exclusion Determination

**Proposed Action Title:** Mid-Scale Dark Energy Spectroscopic Instrument (DESI) (LB-CX-15-02)

**Program or Field Office:** Berkeley Site Office

**Location(s) (City/County/State):** Berkeley, California, and other DOE-funded locations associated with DESI

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### **Proposed Action Description:**

The U.S. Department of Energy (DOE) proposes to construct, assemble, and operate a wide-field spectroscopic survey experiment that would be a new, next-generation, state-of-the-art, ground-based Mid-Scale Dark Energy Spectroscopic Instrument (DESI) to study the nature of dark energy, which is accelerating the expansion of the universe. DESI is designed to probe the “dark sector” of the universe to explore the mysteries of dark energy.

Proposed activities associated with DESI would include manufacturing and assembling components and systems (e.g., corrector support systems, focal plane systems, spectrograph systems, instrument control systems, off-line systems infrastructure) at multiple existing federal and non-federal facilities (e.g., DOE laboratories and universities). DOE’s proposed action would include funding, constructing, assembling, and delivering instruments, components, and systems to the Kitt Peak National Observatory (KPNO), located in Arizona. Photographs of the existing Mayall Telescope, located and operated by the National Science Foundation (NSF) in Kitt Peak, Arizona, and the location of the proposed DESI instrumentation are provided in Figures 1 and 2.

NSF’s proposed action includes installation and operation of the spectrographic instrument on the existing 4-meter Mayall optical telescope at the KPNO to carry out the wide-field spectroscopic survey experiment. NSF completed a categorical exclusion determination for the proposed work located at the KPNO (NSF Record of Environmental Compliance, dated October 23, 2014) and determined that the NSF proposed action could be categorically excluded.

To ensure environmental impacts are being evaluated for the proposed scope of work associated with the DESI project, DOE and the NSF are working together to coordinate activities associated with the entire DESI project. Since no new facilities are proposed and the activities are occurring within existing facilities, cumulative impacts for the entire project are not expected to be significant, and no unusual impacts are expected.

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### **Categorical Exclusion(s) Applied:**

B3.6 - Small-scale research and development, laboratory operations, and pilot projects  
B1.31 Installation or relocation of machinery and equipment

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For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

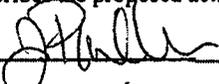
To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph

B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

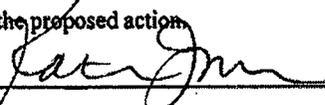
There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

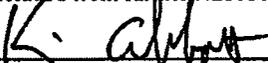
I concur that the above description accurately describes the proposed action.

LBNL Environmental Planner: Jeff Philliber  Date Determined: 11-20-14

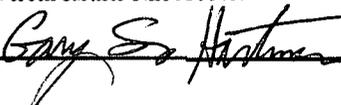
I concur that the above description accurately describes the proposed action.

BSO Project Manager: Katherine Johnescu  Date Determined: 11/20/14

The above description accurately describes the proposed action, which reflects the requirements of the CX cited above. Therefore, I recommend that the proposed action be categorically excluded from further NEPA review and documentation.

BSO NEPA Program Manager: Kim Abbott  Date Determined: 11/20/14

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1 B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer: Gary Hartman  Date Determined: 11/25/2014

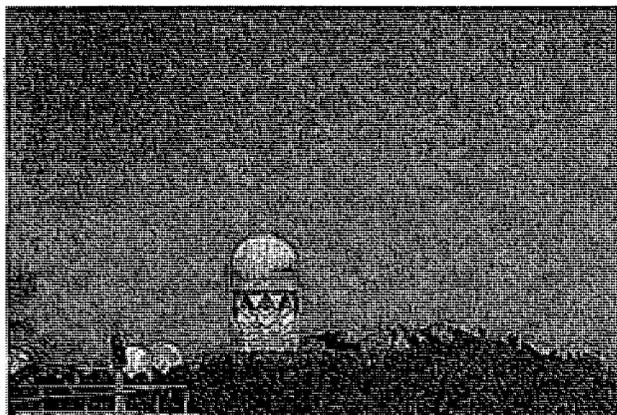


Figure 1. The existing Mayall Telescope, located at Kitt Peak National Observatory, Kitt Peak, AZ.

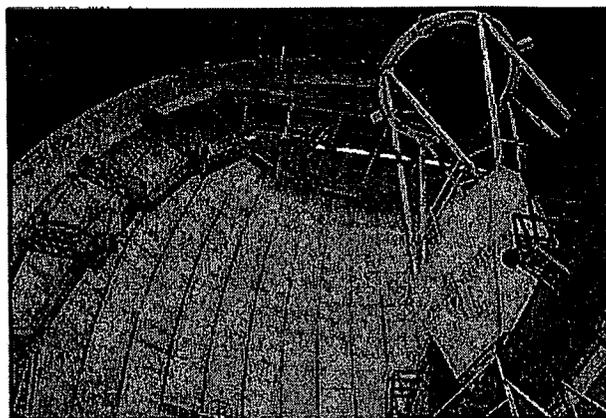


Figure 2. Location of the proposed DESI instrumentation.