

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: High Performance Computing Upgrades

SECTION B. Project Description:

Idaho National Laboratory (INL) has a High-performance Computing (HPC) Data Center located in the Engineering Research Office Building (EROB). The HPC capabilities are essential to conducting research at INL and directly support the INL modeling and simulation mission, Department of Energy (DOE) programs such as the Consortium for Advanced Simulation of Light Water Reactors, Advanced Test Reactor experiments, and University collaboration through the Center for Advanced Energy Studies. The HPC Data Center is proposing to procure (lease-purchase) a next generation supercomputer in the EROB HPC Data Center. This new computational system investment would allow INL to continue to be relevant and support DOE mission areas in modeling and simulation. The next generation supercomputer would add an average of 400 kW of additional heat load and impact the ability of the data center to operate normally.

If a new supercomputer is operational without additional cooling capacity being available, interrupted service of HPC capabilities would be expected at least once per month. The duration of the outages could range between a few hours and a week.

The scope of this project is to upgrade the existing EROB HPC Data Center with additional cooling capacity in order to support a next generation supercomputer. Project activities include installation of the following:

- One (1) packaged chiller (161 tons refrigerant)
- Two (2) chilled water pumps (10 hp) and suction diffusers
- Two (2) cooling towers (465 gpm each)
- Seventy-eight (78) heat exchanger modules (plates).

Project activities also include installation of necessary piping, supports, insulation, and valving; electrical power; HVAC controls; earthwork and concrete.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions: Fugitive dust may be generated while excavating for the cooling tower concrete pad. All reasonable precautions would be taken to control fugitive dust. If dust control methods are required, the subcontractor would document the method used and frequency of application in their daily logbooks.

Mobile sources such as generators, welders, and compressors may be used temporarily (less than six months) by subcontractors at the construction site. These sources would be required to meet Idaho Administrative Procedures Act (IDAPA) 58.01.01.625 visible emission opacity requirements.

Certified Refrigeration Technicians would be used if refrigerant is to be evacuated/added to the cooling systems.

Generating and Managing Waste: Typical construction debris waste such as plastic, wood, packaging material, Resource Conservation and Recovery Act (RCRA) empty chemical containers, scrap wire, scrap metal, etc., may be generated during the project. Any brass, bronze, or circuit boards would be removed, segregated and managed as RCRA scrap metal through Research and Education Campus (REC) Facility Waste Generator Services (WGS). All waste would be characterized and dispositioned at the direction of WGS.

Releasing Contaminants: Water treatment chemicals (corrosion inhibitor, biocide) that are currently being used by the system would not change.

Typical Construction chemicals such as fuels, lubricants, pipe seal, adhesives, paints, refrigerant, weld rod, etc., would be used on the project. The Subcontractor would submit all chemical inventory items and associated Material Safety Data Sheets (MSDS's) in the vendor data system for approval. The Construction Chemical Coordinator would track these chemicals in the INL Comply Plus Chemical Management System. Chemical use has a potential for small amounts of air emissions and spills. Any spills would be reported to the Spill Notification Team and cleaned up by the subcontractor. Waste from spills would be dispositioned at the direction of REC WGS.

Using, Reusing, and Conserving Natural Resources: All materials would be reused and recycled where economically practicable. All applicable waste would be diverted from disposal in the landfill where conditions allow. New equipment would meet either the Energy Star or Significant New Alternatives Policy (SNAP) requirements as appropriate (see <http://www.sftool.gov/GreenProcurement/ProductCategory/14>). In addition, the project will practice sustainable acquisition, as appropriate and practicable, by procuring construction materials that are energy efficient, water efficient, are bio-based in content, environmentally preferable, non-ozone depleting, have recycled content, or are non-toxic or less-toxic alternatives.

SECTION D. Determine the Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

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For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, 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 or facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: 10 CFR 1021, Appendix B to Subpart D item B1.31 "Installation or relocation of machinery and equipment."

Justification: The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D, item B1.31 categorical exclusion, "Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) Yes No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 6/16/2014