FINDING OF NO SIGNIFICANT IMPACT
FOR THE PROPOSED
COAL-FIRED DIESEL GENERATOR PROJECT

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

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE has prepared an Environmental Assessment (EA) (DOE/EA-1183) for a project proposed by Arthur D. Little, Inc., to demonstrate a clean coal technology. Under this proposal, DOE would provide partial funding under a cooperative agreement to support the design, construction, and operation of a 6.3 megawatt-electric coal-fired diesel generator at the University of Alaska, Fairbanks.

The objective of the proposed project is to test the technical, environmental, and economic viability of a coal-fired diesel generator for producing electric power in small power generating markets. Coal for the diesel generator would be supplied from existing sources used by the University's power plant. A cleanup system would be installed to limit gaseous and particulate emissions. Electricity and steam produced by the diesel generator would be used to supply the needs of the University.

The proposed diesel generator and supporting facilities would occupy approximately two acres of land adjacent to coal- and oil-fired power plant and research laboratory buildings at the University. Construction would be performed from late 1997 through mid-1999 and would be followed by a three-year period of intermittent operational testing.

Based on the analyses in the EA, the DOE has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment as defined by the National Environmental Policy Act (NEPA) of 1969. Therefore, preparation of an Environmental Impact Statement is not required, and DOE is issuing this FONSI.

COPIES OF THE EA ARE AVAILABLE FROM:

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BACKGROUND: Under the Clean Coal Technology (CCT) Program that was established by Congress to demonstrate advanced, more efficient, and environmentally responsive coal utilization and environmental control technologies for U.S. markets, the DOE was authorized to establish cost-shared cooperative agreements with private industry for technology demonstrations. The Coal-Fired Diesel Generator project was selected under a competitive solicitation of the CCT Program. Arthur D. Little, Inc., proposed the project and selected the project site at the University of Alaska, Fairbanks. DOE's purpose in selecting this project was to help fulfill the goals and objectives of Congressional intent by demonstrating the potential of durable, low emission, and economic technology for use in smaller-scale coal-fired power generation applications.

DESCRIPTION OF THE PROPOSED PROJECT: The proposed action is partial funding of a cooperative agreement between DOE and Arthur D. Little to design, construct, and operate a coal-fired diesel generator and supporting facilities at the University of Alaska, Fairbanks. Supporting facilities include pollution control equipment, a coal cleaning facility, a coal-water fuel preparation facility, and storage vessels. These facilities would be located on approximately 2 acres of University property adjacent to the University's existing power plant and research laboratories.

Currently, the University operates four boilers (two coal fired and two oil fired) to generate approximately 10 megawatts of power and steam for operating and heating campus buildings. Under the proposed action, one coal-fired and one oil-fired boiler would be taken off-line for use only under emergency conditions. Coal from sources used to supply current fuel needs for the University's power plant would provide the fuel for the diesel, and the overall consumption of coal and fuel oil at the University would decrease.

Operational testing of the diesel on coal would occur for up to 6,000 hours over a three-year demonstration period. Coal feed to the diesel would consist of a 50:50 mixture of coal and water, which would be prepared in supporting facilities to be constructed at the University.

ENVIRONMENTAL IMPACTS: The environmental impacts of constructing and operating the coal-fired diesel generator and supporting facilities were analyzed in the EA. The environmental resources covered by the analyses were: air quality, biodiversity and environmentally sensitive resources (threatened and endangered species), cultural resources (historical and archaeological properties), water quality, soil and groundwater use, noise, socioeconomic resources, worker safety and health, traffic and transportation, and solid and hazardous wastes. Pollution prevention, environmental justice, resource utilization, and long-term and cumulative impacts were also considered.

The environmental analysis identified that the most notable changes to result from the proposed project would occur in the following areas: power plant configuration at the University of Alaska, Fairbanks; air emissions; water use and discharge; solid waste generation; noise levels at the power plant site; and transportation of coal to the power plant. No substantive adverse impacts or environmental concerns were identified from analyzing the effects of these changes.

AIR EMISSIONS: A temporary increase in air emissions would occur during the construction phase of the project due to vehicular exhaust emissions from construction equipment and "fugitive"

particulate emissions from wind erosion during site excavation. The latter would be controlled by watering, to eliminate dust generation. During operations with the diesel generator, emissions of sulfur and nitrogen oxides, particulate, and carbon monoxide would decrease by approximately 50% as a consequence of changes in power plant operations and addition of pollution control equipment.

BIODIVERSITY AND ENVIRONMENTALLY SENSITIVE RESOURCES: The U.S. Fish and Wildlife Service has been consulted and confirms that there are no Federally listed or State protected species of animals or plants that would be affected by the proposed project.

CULTURAL RESOURCES: Consultation with the Alaska Office of History and Archaeology has confirmed that there would be no effect on cultural resources or historic properties listed in or eligible for listing in the National Register of Historic Places.

WATER QUALITY: Construction activities would not be expected to impact existing surface water or groundwater, nor would any new liquid waste streams be generated. However, during operations, a maximum of 3,000 gallons of wastewater would periodically be generated when facilities are shutdown and flushed for maintenance. This would be an intermittent occurrence, as often as once per week during the early stages of operation, with decreasing frequency thereafter. Much of the water would be recycled; the remainder, after characterization, would be discharged to the sanitary sewer or, if hazardous, removed by a licensed waste contractor.

SOIL/GROUNDWATER: Control measures such as water application would be used to suppress creation of windborne dust during construction. Use of silt fences and hay bales would be used to control erosion and sedimentation. There are no concerns about groundwater contamination impacts of the proposed action because construction activities would not reach groundwater levels, and proper containment and countermeasures plans would be used to avoid contamination from accidental releases and leaks. Recovery of groundwater from wells operated by the University of Alaska would increase by 14% to support diesel generator operations, which is well within the capacity of the groundwater recovery system.

NOISE: Temporary and intermittent noise disturbances would occur during facility construction as a result of construction machinery and construction-induced traffic. These increases would be localized, sporadic, and limited to normal daytime working hours. During operation of the diesel generator, elevated noise levels would occur in the vicinity of process equipment. Workers in these areas would be required to wear proper hearing protective equipment. The closest noise receptors to the proposed site of the diesel system would be on-campus buildings located 500 feet from the noise source, at which distance normal attenuation would reduce the noise levels to acceptable levels.

SOCIOECONOMICS: During construction, a peak workforce of 32 laborers would be required and would be available in the Fairbanks area. Once constructed, the diesel generator would require 5 new operators. These changes would have a minimal, but positive, impact on local employment.

SAFETY AND HEALTH: Safety and health protection for operation of the diesel system would be provided by application of the existing worker health and safety programs for power plant and

laboratory workers at the University. Fire risk associated with coal diesel operations would be averted since all coal operations would be conducted in a slurry form with water.

TRAFFIC AND TRANSPORTATION: Small traffic increases would occur during the construction period to accommodate the peak work force of 32 laborers. During operations, truck deliveries for power plant coal and oil deliveries would be reduced by 40% and 25%, respectively.

SOLID AND HAZARDOUS WASTES: During operations, solid waste quantities up to 350 tons per year would be generated and would primarily consist of coal ash similar to that produced at the existing power plant. Waste characterizations would be performed to assure the nonhazardous nature of solid wastes, which would undergo disposal in a landfill or as fill material. Any identified hazardous wastes would be removed for disposal by a licensed waste contractor.

POLLUTION PREVENTION: Specific pollution prevention measures involving selective procurement of coal with reduced ash forming constituents and recycle of water from equipment cleaning would be performed. Conventional control measures for containment or treatment of environmental pollutants would also be implemented.

ENVIRONMENTAL JUSTICE: The proposed action would occur in a developed commercial area with no low income or minority communities. No disproportionately high or adverse impact on minority or low-income communities would be expected.

LONG-TERM AND CUMULATIVE IMPACTS: Operation of the coal-fired diesel generator system, including support facilities, would be expected to continue following completion of the DOE demonstration project. Under the same operating conditions as those for the demonstration project, the long term environmental impacts, which are primarily associated with increased water usage and non-hazardous solid waste generation, would not result in adverse effects. No other large-scale projects are proposed at the University of Alaska-Fairbanks site that, in conjunction with the Coal-Fired Diesel Generator project, would create adverse cumulative impacts.

ALTERNATIVES CONSIDERED: In addition to the proposed action, the no-action alternative was considered. Under the no-action alternative, DOE would not provide funding for the development of the coal-fired diesel generator system as described in the EA, but the University of Alaska would be expected to install additional power capability, probably an oil-fired diesel generator, to supply their future power needs. Alternative locations for the diesel generator within the area of the power plant at the University of Alaska were considered, but the environmental consequences of siting at each location were similar. An alternative process for coal treatment to produce fuel feed for the diesel system was considered, but operational problems that would result from application of this alternative required its elimination from consideration.

PUBLIC AVAILABILITY: The draft EA was distributed for review by the State of Alaska and the public in the Fairbanks area; copies were made available in the public library and at the University of Alaska library. Public notices were placed in the Fairbanks newspaper. No comments on the proposed action were received.

This FONSI, and the EA on which it is based, will be distributed to all persons and agencies known to be interested in or potentially affected by the proposed action. Additional copies of the FONSI and EA may be obtained from the Federal Energy Technology Center.

DETERMINATION: Based on analyses in the EA, DOE has determined that the proposed Federal action, to provide cost-shared financial assistance for demonstrating the performance of a coal-fired diesel generator at the University of Alaska, Fairbanks, does not constitute a major Federal action that would significantly affect the quality of the human environment as defined by NEPA. Therefore, an Environmental Impact Statement is not required and DOE is issuing this FONSI.

ISSUED IN MORGANTOWN, WV, this 30th day of May, 1997.

Rita A. Bajura

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Director
Federal Energy Technology Center