300 AREA STEAM PLANT REPLACEMENT

HANFORD SITE, RICHLAND, WASHINGTON

U.S. DEPARTMENT OF ENERGY

FINDING OF NO SIGNIFICANT IMPACT

MARCH 1997

AGENCY: U.S. Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: The U.S. Department of Energy (DOE) has prepared an Environmental Assessment (EA), DOE/EA-1178, to assess environmental impacts associated with replacing a centralized heating system in the 300 Area of the Hanford Site, near Richland, Washington. The current heating system would be replaced with heating units for individual buildings or groups of buildings. This activity includes constructing new natural gas pipelines to provide a fuel source for many of these units and construction of a central control building or conversion of an existing building to operate and maintain the system. These energy conservation measures for 300 Area facilities are designed to reduce energy consumption and facility maintenance and reduce emissions of pollutants to the environment. Alternatives considered in the review process were: (1) the no action alternative; (2) the use of alternative fuels, such as low-sulfur diesel oil; (3) construction of a new central steam plant, piping and ancillary systems; (4) upgrade of the existing central steam plant and ancillary systems; and (5) alternative routing of the gas distribution pipeline that is a part of the proposed action.

Based on the analysis in the EA and considering the comments of the Benton County Clean Air Authority and the State of Washington, DOE has determined that the proposed action is not a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321, et seq. Therefore the preparation of an Environmental Impact Statement (EIS) is not required.

SINGLE COPIES OF THE ENVIRONMENTAL ASSESSMENT AND FURTHER PROJECT INFORMATION ARE AVAILABLE FROM:

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PURPOSE AND NEED: DOE needs to reduce energy expenditures and improve energy supply reliability at the 300 Area of the Hanford Site.

BACKGROUND: The 300 Area contains laboratories, research and development facilities, offices, and numerous other support facilities for the Hanford Site. Steam to support process operations and facility heating is currently produced by a centralized oil-fired boiler plant located in the 300 Area and piped to approximately 26 facilities in the 300 Area. This plant was constructed during the 1940s and, because of its age, is not efficient, requires a relatively large operating and maintenance staff, and is not reliable.

The low efficiency and design of the boiler also result in high emission rates of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and particulates (total suspended particulates and fine particulate matter [PM_{10}]). DOE has committed to the State of Washington to reduce sulfur dioxide emissions in the 300 Area.

PROPOSED ACTION: DOE is proposing an energy conservation measure (the proposed action) for a number of buildings in the 300 Area of the Hanford Site. This action includes replacing the centralized heating system with heating units for individual buildings or groups of buildings, constructing new natural gas pipelines to provide a fuel source for many of these units and construction of a central control building or conversion of an existing building to operate and maintain the system. The action would also include rerouting backup electrical lines and relocating electrically powered air compressors. The proposed action is designed to reduce energy consumption and facility maintenance.

ALTERNATIVES CONSIDERED: Alternatives to the proposed action included: (1) no action alternative; (2) use of alternative fuels, such as low-sulfur diesel oil; (3) construction of a new central steam plant, piping and ancillary systems; (4) upgrade of the existing central steam plant and ancillary systems; and (5) alternative routing of the gas distribution pipeline that is a part of the proposed action.

The no-action alternative, use of alternative fuels, replacement of the existing steam plant, and upgrade of the existing steam plant would result in actions that would be more expensive, would offer less efficiency and reliability, and/or would result in higher emissions. Except for electrical boilers, the use of alternative fuels would result in higher emissions than the proposed action. Alternative pipeline routing would be shorter but could result in greater disruption of traffic patterns in Richland during the construction period.

ENVIRONMENTAL IMPACTS:

CONSTRUCTION: The major portion of the construction that would take place during implementation of the proposed action would not directly involve radioactive or other hazardous materials, but would present common construction hazards and impacts, mitigated through appropriate industrial safety precautions to prevent inadvertent exposures, accidents and injuries. Radiological safety precautions would be followed where appropriate, to prevent inadvertent exposure to radioactive materials.

All construction activities would take place in previously disturbed areas. The only consumption of nonrenewable resources would be the relatively minor amounts of concrete and metals used in the heating equipment and pads, and construction vehicle fuel used. There would be no releases of contaminants to the soil or groundwater from implementation of this proposed action, and no anticipated releases of any radioactive or hazardous materials.

Small amounts of construction waste and debris would be generated during implementation of the proposed action. If any radioactive or hazardous materials are encountered during construction activities, appropriate precautions would be taken to control airborne concentrations and any wastes produced.

Some dust, vehicle exhaust gases, and heat from construction equipment would be released to the air as a result of construction activities associated with implementing the proposed action. Dust mitigation measures would be implemented as needed to control dust levels. The incremental effects of dust, vehicle exhaust emissions and equipment heat rejection on the local air quality would be negligible compared to the routine daily traffic in the area.

Potential accidents during construction of the energy conservation measures proposed would include routine industrial events associated with use of heavy equipment, excavation of pipelines and utilities, and construction of a central control building or conversion of an existing building to operate and maintain the system.

Ambient noise levels would temporarily increase in the immediate vicinity as a result of project construction activities. These noise levels would be in the same range and would be masked by the noise level of the Bypass Highway, for pipeline installation, and existing operations for 300 Area construction.

No significant historic properties are likely to be impacted by pipeline construction. The cultural resource survey along the railroad lines resulted in the identification of no significant cultural resources. Cultural resource monitoring would be required during all trenching and other subsurface disturbance activities. On-site monitoring would be required during all activities conducted within 400 meters (one-quarter mile) of the Yakima and Columbia Rivers. If it is found that this project may result in adverse effects on National Register eligible properties, steps to mitigate the effect will be identified and implemented according to the recently executed Programmatic Agreement on the built environment.

Installation of the gas line and boilers, rerouting of the backup electrical lines, and the relocation of air compressors as proposed under the preferred alternative would disturb only small areas of poor quality habitat. The impact of this activity on the ecosystem as a whole would be minimal.

OPERATION: Operation of the energy conservation measures proposed in this EA would have the effect of lowering environmental impacts from process steam generation and space heating at the 300 Area through improved efficiencies of boilers and heating units, as well as converting to cleaner burning fuel. Routine operations would not result in any radioactively contaminated effluents or hazardous materials emissions. The only releases would be exhaust gases from

combustion of natural gas.

Use of natural gas as a fuel supply introduces the risk of leaks that could lead to explosions or asphyxiation if the leaks occurred in confined spaces. This risk has been shown over many years to be very small and acceptable in residential and commercial uses.

If work takes place in a radiation zone, the recommendations of a radiation control organization would be followed. These recommendations may include working within a "greenhouse" or other controlled environment, equipment and personnel radiation surveys and monitors, and/or the use of personal protection equipment by the workers. Based on the application of these measures, minimal radiological exposure impacts would be associated with operation of the proposed energy conservation measures. No hazardous material exposure impacts would be associated with the proposed energy conservation measures.

Operation of the new natural gas boilers and space heaters would cause air emissions of combustion products from burning natural gas. Implementing the proposed action would result in a reduction in NO_x, SO_2, and fine particulate (PM_{10}) emissions and an increase in carbon monoxide (CO) emission for the 300 Area.

Localized increases in noise levels are expected in the immediate vicinity of the new boiler annexes and compressors, however these noise levels are not expected to exceed allowable noise levels for the protection of hearing of directly involved workers.

Approximately 25 daily vehicle trips would be eliminated when the 300 Area central steam plant is closed. In addition, the vehicle trips associated with transporting fuel oil to the central steam plant would also be eliminated due to operating the proposed natural gas pipeline.

CUMULATIVE IMPACTS: Cumulative impacts from the proposed energy conservation measures would include a small increase in the amount of solid waste sent to onsite and offsite solid waste disposal facilities. Reduced air emissions during operations would provide a beneficial impact and enable DOE to meet more stringent air pollution prevention standards. The temporary increase in the number of onsite workers during the construction period, when compared to the overall decline in the Hanford Site work force, is expected to have negligible impacts. The decrease in the number of onsite workers during the operations period is expected to very minimally impact the regional socioeconomic structure.

Hanford Site emission for NO_x, SO_2, and PM_{10} would decline and CO emissions would increase. These, when considered in conjunction with future proposed Hanford Site actions would result in a measurable change in air quality only in the 300 Area, and are expected to pose no threat to health.

ENVIRONMENTAL JUSTICE: The impact of the preferred alternative on the area economy would be relatively small, and is not expected to disproportionately affect minority or low-income populations. The preferred alternative is not expected to substantially affect human health or result in disproportionately high and adverse impacts to minority and low-income populations.

DETERMINATION: Based on the analysis in the EA and considering the comments from the Benton County Clean Air Authority and the State of Washington, I conclude that the proposed replacement of the centralized heating system with heating units for individual buildings or groups of buildings, constructing new natural gas pipelines to provide a fuel source for many of these units, construction of a central control building or conversion of an existing building to operate and maintain the system, and rerouting backup electrical lines and relocating air compressors does not constitute a major federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore the preparation of an EIS is not required.

Issued at Richland, Washington, this 12th day of March, 1997.

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