DOE/EA-1593

Finding of No Significant Impact and Final Environmental Assessment for the Y-12 Steam Plant Life Extension Project - Steam Plant Replacement Subproject

U.S. Department of Energy
Oak Ridge Y-12 Site Office
National Nuclear Security Administration

August 2007

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NATIONAL NUCLEAR SECURITY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT FOR THE
Y-12 STEAM PLANT REPLACEMENT
PROJECT ENVIRONMENTAL ASSESSMENT

AGENCY: Department of Energy, National Nuclear Security Administration

ACTION: Finding of No Significant Impact

SUMMARY: Steam is essential to the Y-12 National Security Complex (Y-12 Complex) mission because it supports the operation and protection of numerous facilities and production processes at Y-12 Complex. Reliable and cost-effective steam generation is vital to the operation of the Y-12 Complex. It is the primary source of building heat for personnel comfort and it provides freeze protection for critical services that include fire protection systems and heat tracing of exterior above ground water systems. Steam is also necessary to support the production mission that includes regeneration of dehumidification systems and operation of steam-powered ejectors in the wet chemistry operations of Enriched Uranium Operations. The existing steam plant also provides steam condensate and treated water as makeup water for the demineralized water plant. The National Security Administration (NNSA) proposes to replace the existing coal fired boiler steam plant with a new centralized steam plant using a natural gas fired, packaged boiler system. The NNSA has prepared an Environmental Assessment (EA) (DOE/EA-1593) to analyze the potential environmental impacts associated with the Proposed Action and reasonable alternatives. A Public Notice announcing the availability of the draft EA, the length of the comment period, and where copies of the draft EA could be obtained was placed in local newspapers to provide the opportunity for public involvement and comment. Comments received were evaluated and appropriately addressed in the Final EA. The Y-12 Site Manager 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* (NEPA) (42 U.S.C. 4321 et seq.). Therefore, the preparation of an environmental impact statement (EIS) is not required.

ADDRESSES: The EA and Finding of No Significant Impact (FONSI) have been prepared and are available to the general public. For copies and general information on the NNSA NEPA process at Y-12, please contact: Ms. Pam Gorman, NNSA Y-12 NEPA Compliance Officer, NNSA/Y-12 Site Office, P.O. Box 2050, Oak Ridge, Tennessee 37831; or telephone (865) 576-9903. For general information on the DOE NEPA process, please contact: Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (EH 42), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, D.C. 20585, telephone (22) 586-4600, or leave a message at (800) 472-2756.

SUPPLEMENTARY INFORMATION: As described in Section 1.1 of the EA, the purpose of the Proposed Action is to establish a long term source of steam production at the Y-12 Complex. NNSA proposes to utilize skid mounted gas fired boilers as an alternative to extending the life of the current steam plant at the Y-12 Complex. This action would require a new building, several package boilers, water treatment units, and two fuel oil storage tanks. The skid mounted package boiler concept would be a long term solution, scalable to the Y-12 Complex existing and future

energy requirements. In addition to the Proposed Action, the EA evaluated the alternative of extending the life of the existing steam plant by replacing and/or repairing the existing three boilers and the associated auxiliary systems to extend the useful life 10 to 15 years. The EA also includes the No Action Alternative, under which DOE would continue evaluating utilities for needed upgrades and/or replacement in accordance with existing management approaches.

ENVIRONMENTAL IMPACTS: Impacts to land use would not extend beyond those of the No Action Alternative for the construction of the boiler house and fuel storage facility. This would involve significantly less than one (1) percent of the available land at the Y-12 Complex. Life extension of the existing steam plant infrastructure would have no cumulative impact to geology and soils because of the stability of soils at the Y-12 Complex, and because all facilities would comply with regulatory requirements. As it is today, air quality at Y-12 is generally good, with the exception of the 8-hour O_3 (ozone) and $PM_{2.5}$ standards. The greater Knoxville and Oak Ridge areas, which include the Y-12 Complex, are in attainment with the NAAQS for all other criteria pollutants for which EPA has made attainment designations. The alternatives analyzed in this EA would not have an adverse cumulative impact on air quality or regional climatic conditions. The Proposed Action significantly reduces air emissions to the environment.

All the alternatives analyzed, except for the No Action alternative, would have a beneficial effect on the existing steam plant system. There would be no negative effects on the groundwater and surface water resources. Because there are no critical habitats for threatened or endangered species, and because of the absence of any significant ecological resources at any of the locations potentially affected by the alternatives, no cumulative impacts to ecological resources are expected. This conclusion is also true for cultural resources. Socioeconomics would be relatively unchanged by any of the alternatives because the alternatives would not create a significant number of jobs, and would not exceed housing demands, community services, or transportation capabilities. With respect to human health, improvements to the steam plant system would reduce air pollutants. Waste management activities would be improved slightly as a result of discontinued use of coal as fuel for the Proposed Action. All wastes generated would be managed and disposed of in accordance with the project-specific waste management plan and in compliance with all regulatory requirements. Although the stacks associated with the packaged boiler system would be taller than the boiler house and the adjacent buildings, the overall visual classification of the Y-12 Complex would not change as a highly developed site.

DETERMINATION: Based on the analysis in the EA, I conclude that the Proposed Action does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, an EIS for the Proposed Action is not required.

Issued in Oak Ridge, Tennessee, this 6th day of September 2007.

Manager, Y-12 Site Office
National Nuclear Security Administration
U.S. Department of Energy