



**Department of Energy**

Carlsbad Area Office  
P. O. Box 3090  
Carlsbad, New Mexico 88221

November 18, 1999

ENTERED

Mr. John Kieling, Hazardous Waste Permits Program Manager  
Hazardous and Radioactive Materials Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502-6110

NOV 1999  
RECEIVED

**Subject:** Submittal of Fan 700C Engineer Drawings and Certification

Dear Mr. Kieling:

Pursuant to the WIPP Hazardous Waste Facility Permit, Permit Number: NM4890139088-TSDF, Section M2-2a (3), the WIPP is providing documentation on the addition of a third fan and associated ductwork to the WIPP ventilation system.

Attached are copies of the *Waste Isolation Pilot Plant Main Fan System Upgrade Engineer's Certification Letter* from Merrick to the Westinghouse Waste Isolation Division and professional engineer stamped drawings. The professional engineers stamped drawings are 2546-C2-01, Rev.2, *Fan 700C Phase II Civil Grading & Drainage*, and 2546-M2-01, Rev. 2., *Fan 700C Installation Phase II Ductwork Plan and Elevation*.

Please note, with the acceptance of this documentation, Section M2-2a(3), *Underground Ventilation System Description*, should be revised as follows:

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The underground ventilation system consists of six centrifugal exhaust fans, two identical HEPA-filter assemblies arranged in parallel, isolation dampers, a filter bypass arrangement, and associated ductwork. The six fans, connected by the ductwork to the underground exhaust shaft so that they can independently draw air through the Exhaust Shaft, are divided into two groups. One group consists of three main exhaust fans, two of which are utilized to provide the nominal air flow of 425,000 standard ft<sup>3</sup> per min (SCFM) throughout the WIPP facility underground during normal operation.

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In the normal mode, two main surface exhaust fans, located near the Exhaust Shaft, will provide continuous ventilation of the underground areas. All underground flows join at the bottom of the Exhaust Shaft before discharge to the atmosphere.



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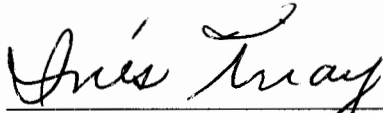
Mr. John Kieling

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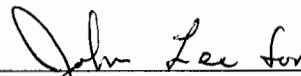
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact Ms. Cynthia Zvonar of my staff at (505) 234-7495 should you have any questions regarding this documentation.

Sincerely,



Dr. Inés R. Triay, CAO Manager  
U. S. Department of Energy



J. L. Epstein, General Manager  
Westinghouse Waste Isolation Division

Attachments



**MERRICK**

Engineers & Architects

Merrick & Company  
5700 Harper, NE / Suite 210  
Albuquerque, New Mexico / 87109 / USA  
505/858-1636 / Fax 505/858-1617

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**WASTE ISOLATION PILOT PLANT MAIN FAN SYSTEM UPGRADE  
ENGINEER'S CERTIFICATION**

Merrick & Company performed the detail design and engineering support for the installation of the third main mine ventilation fan (No. 41-B-700C) at the Waste Isolation Pilot Plant. Merrick provided specifications and drawings for two construction packages; one for the design and installation of the elbow tie-in to the mine vent ductwork; the other for installation of the fan, foundations, ductwork supports, electrical feed and instrumentation/control tie-ins. The fan installation was designed in accordance with the applicable Design Class III codes and standards noted in Table D-7 of the New Mexico Resource Conservation and Recovery Act (RCRA) Permit Application DOE/WIPP 91-005.

The addition of the third mine fan has been completed. The fan will work with existing fans to provide redundancy for two out of three fans normal mode ventilation (nominally 425,000 SCFM) or alone to provide alternate mode ventilation (nominally 260,000 SCFM).

The fan ties into the west side of the main exhaust ductwork as shown on the attached general arrangement drawing. During a ventilation outage, the opening in the main exhaust duct was cut, and the elbow and first isolation damper were installed. The remaining ductwork, fan, dampers and controls were then installed with minimal impact to facility operation.

As project manager for Merrick & Company I oversaw the design of the 41-B-700C main mine fan installation. Field directed design changes were reviewed by myself or Merrick project discipline staff, all registered professional engineers in New Mexico, and found to be in accordance with the methods and materials originally specified.

In addition, Merrick project discipline engineers (civil/structural, mechanical, and electrical) performed an on-site review of the fan installation on May 26 and 27, 1999. Merrick personnel also observed the successful startup and running of the fan, and reviewed the Work Order Packages and Engineering Change Orders and found the installation to be in accordance with the Merrick design.



*E. Fisher* 7/8/99