



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

NOV - 8 1999

Mr. David F. Rifkind  
Condon & Forsyth, LLP  
1016 Sixteenth Street, NW  
Washington, DC 20036

Ref. No: 99-0278

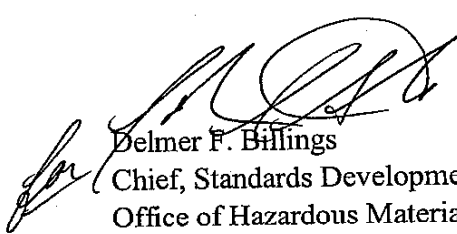
Dear Mr. Rifkind:

This is in response to your letter of October 5, 1999, concerning whether the helium or nitrogen cryogenic refrigerant system in a Magnetic Resonance Imaging machine (MRI) is subject to the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180). You state that MRIs will be deinstalled from fixed locations for installation at a new site.

As provided by § 173.320(b)(2), the HMR do not apply to cryogenic atmospheric gases and helium when used in operation of a process system, such as a refrigeration system. It is the opinion of this Office that the MRIs described fall within this exception.

I hope this information is helpful.

Sincerely,

  
Delmer F. Billings  
Chief, Standards Development  
Office of Hazardous Materials Standards



990278

173.320

CONDON & FORSYTH LLP

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LOS ANGELES  
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October 5, 1999

LaValle  
§ 173.320  
99-0278

Mr. Edward T. Mazullo  
Director, Office of Hazardous Materials Standards  
United States Department of Transportation  
400 Seventh St., S.W.  
Washington, DC 20790

Re: Request for Clarification of Applicability of 49 C.F.R. §170.320(b)(2) to  
Transport of Magnetic Resonance Imaging Machine Containing Cryogenic Liquid

Dear Mr. Mazullo:

We are writing on behalf of Siemens Corporation ("Siemens") and its subsidiary Oxford Magnet Technology Ltd. ("OMT") to request written clarification that the cryogenic refrigerant system in a Magnetic Resonance Imaging machine ("MRI") qualifies as a "process system" and, as provided by 49 C.F.R. §170.320(b)(2), transport of the MRI is not subject to the requirements in 49 C.F.R. Parts 171-180.

An MRI is a medical diagnostic machine which subjects a body to a magnetic field generated by a superconducting magnet resulting in a high quality internal image of the human body. The superconducting magnet is super cooled by liquid helium or nitrogen encased in a pressure vessel. All pressure vessels on Siemens' MRIs comply with the German standard AD Merkblad and the British Standard BS 5500. Pressure vessels are equipped with primary and secondary relief valves. For your reference, I have attached at Tab A a schematic of the MRI refrigeration system and venting.

Siemens seeks to deinstall MRIs from fixed locations and transport them on trucks on public highways for installation at a new site. The deinstallation involves decommissioning the magnet to eliminate the danger of a quench during transport. During transport the magnet is maintained at super cooled temperatures by the liquid helium or nitrogen.

The DOT has previously determined that an MRI permanently affixed to a 48' semi-trailer and which contained liquid helium as part of a refrigerant system used to super cool the MRI magnet qualified as a process system under § 173.320(2), and was, therefore, not subject to the requirements in 49 C.F.R. Parts 171-180. Clarification Letter No. 6594, dated July 18, 1990.

This request differs from the Clarification Letter No. 6594 in that Siemens seeks a determination on the transport of MRI machines which are not permanently affixed on an truck, but have been

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Mr. Edward T. Mazzullo

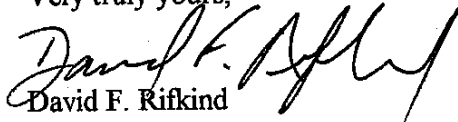
October 5, 1999

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deinstalled from a fixed location and are to be reinstalled and recommissioned for further operations at a new fixed location.

If you have any questions or require additional information please call me.

Very truly yours,

  
David F. Rifkind

Attachment

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