



Fermilab
ES&H Section

Cryogenic Vessel Exception Classes

The Cryogenic Safety Subcommittee met on December 7, 2000, and discussed classes of cryogenic vessels for which no engineering note should be required in accordance with the provisions of FESHM Chapter 5032.

It was not practical to make the list below "airtight" regarding precisely the details of the exempted design. Questions about whether a vessel indeed falls into a class of exceptional vessels may be reviewed by the safety panel, CSS, and/or responsible Division/Section Head or his designee. The reviewers need to be convinced that a vessel does indeed fall into a class of exceptional vessels, and the reviewers must in any case be convinced that the system is safe.

New vessels built to a modified design of an exceptional vessel or repairs to existing exceptional vessels will require documentation showing that the vessel is no worse, in terms of pressure rating, than the original vessel or unmodified design. Documentation must prove that the modification is as good as or better than the weakest part of the original vessel or design.

- a) The cryostats of Doubler magnets of the designs installed in the Tevatron as of 1989. This includes all the warm-iron magnets of the TA-, TB-, TC-, TD-, TQ-series, quadrupoles of the TQ design but of different lengths mostly known as Collins Quads but also including a few first-series low-beta quads, and similar magnets. Note that this class of vessels does not include the cold iron low-beta magnets or subsequent new magnet cryostat designs.
- b) Boxes and components of the designs installed in the Tevatron, switchyard, or beam lines as of 1989 used to transport cryogenic fluids to magnets used in the production, acceleration, or transport of particle beams. This includes spool pieces of the TSA through TSH designs, transfer line components, feed boxes, and other Tevatron boxes.
- c) Satellite refrigerator heat exchanger assemblies which conform to drawings 9110-MD-129233 Rev. M, 9110-MD-129241 Rev. H, or 9110-MD-129244 Rev. J.
- d) Components supplied as part of Model 1400 and similar CTI/Helix/Koch/PSI liquefier cold box packages.

Concurrence: SD Colman Michael Witherell 1/10/01
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