

CALIFORNIA INSTITUTE OF TECHNOLOGY
Laser Interferometer Gravitational Wave Observatory (LIGO) Project

To/Mail Code: A. Lazzarini/18-34
Vacuum Review Bd. Chairman

From/Mail Code: D. Coyne/18-34

Phone/FAX: 626-395-2034
626-304-9834

Refer to: LIGO-E980353-00-D

Date: December 17, 1998

Subject: Vacuum Bake Waiver Request for Polished Optics

LIGO in-vacuum optics are cleaned by a final hot, Liquinox solution & DI rinse and tested via a fringe/vapor test (as defined by Helena Armandula; document number pending); We find that the vacuum bake (at least for optics which have magnets glued on them) leaves a film on the optic which must be subsequently cleaned off. Helena has also found that storage in a container for periods of days leaves a film which must be cleaned off by the same method.

This same cleaning approach is used on small non-suspended optics. Since the Liquinox cleaning leaves the optics cleaner as clean or cleaner than a vacuum bake, it would seem pointless to vacuum bake since it is necessary to clean the optic just prior to installation. The only concern, that I know of, to this waiver of a vacuum bake (raised by Stan Whitcomb) is the difficulty in cleaning unpolished (rough) surfaces. The IO fixed optics are polished on all surfaces. *I propose to waive the requirement (as defined in LIGO-E960022) to vacuum bake optics which have all surfaces (including the cylindrical side surfaces) polished and which do not have any adhesives bonded to the optic.* Please advise me of the Vacuum Review Board's disposition of this waiver request.

DCC:unix

cc:

R. Weiss	H. Armandula	L. Jones
F. Raab	D. Reitze	J. Romie
J. Camp	D. Tanner	G. Billingsley
J. Worden	S. Whitcomb	

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