CALIFORNIA INSTITUTE OF TECHNOLOGY

Laser Interferometer Gravitational Wave Observatory (LIGO) Project

To/Mail Code: Fred Asiri
From/Mail Code: Albert Lazzarini
Phone/FAX: 818-395-8444

Refer to: LIGO-E950108-00-E
Date: December 27, 1995

Subject: LIGO Configuration Change to Nd:YAG Lasers: Impact on Facilities Chiller Requirements.

The LIGO decision to change baseline configuration from Argon ion lasers to Nd:YAG lasers will have an impact on the initial chilled water system capacity. The Nd:YAG power dissipation will not exceed 2kW per laser, whereas the previously estimated power dissipation was 60kW per laser. The design must accommodate the dissipation of this reduced heat load either via air (within the LVEA) or chilled water.

The reduced laser heat load is for the initial phase of LIGO operations. At a later date, it is expected that power dissipation from higher powered laser systems will be comparable to the Argon ion heat loads quoted above. Design changes made by RMP must retain the capability to expand to high power levels of operation without needing to re-plumb the facilities. Therefore, the changes should be reflected only in reducing the number of initially installed chilling units.

AL:al
cc:

Barish	Shoemaker	Raab	Sanders
Asiri	Zucker	Weiss	Savage
Vogt	Coles	Whitcomb	Abramovici
Spero	Coyne	Althouse	Chronological File
			Document Control Center