



***LIGO Laboratory / LIGO Scientific Collaboration***

T1100529-v1

*aLIGO*

October 2011

**PSL Laser Area Enclosure Air Shower Egress**

Peter King

Distribution of this document:

LIGO Scientific Collaboration

This is an internal working note  
of the LIGO Laboratory.

**Albert-Einstein-Institut  
Callinstraße 38  
Hannover, D-30167  
Federal Republic of Germany**  
Phone: (05 11) 762 2229  
FAX: (05 11) 762 2784

**California Institute of Technology  
LIGO Project, MS 100-36  
1200 E. California Blvd.  
Pasadena, CA 91125**  
Phone: (626) 395-2129  
FAX: (626) 304-9834  
E-mail: [info@ligo.caltech.edu](mailto:info@ligo.caltech.edu)

**Laser Zentrum Hannover  
Hollerithallee 8  
Hannover, D-30419  
Federal Republic of Germany**  
Phone: (05 11) 27 88 0  
FAX: (05 11) 27 88 100  
E-mail: [info@lzh.de](mailto:info@lzh.de)

**Massachusetts Institute of Technology  
LIGO Project, NW22-295  
185 Albany St.  
Cambridge, MA 02139**  
Phone: (617) 253-4824  
FAX: (617) 253-7014  
E-mail: [info@ligo.mit.edu](mailto:info@ligo.mit.edu)

**LIGO Hanford Observatory  
P.O. Box 159  
Richland, WA 99352**  
Phone: (509) 372-8106  
FAX: (509) 372-8137

**LIGO Livingston Observatory  
P.O. Box 940  
Livingston, LA 70754**  
Phone: (225) 686-3100  
FAX: (225) 686-7189

<http://www.ligo.caltech.edu>

## 1. Summary

This document lists a retrofit to the air shower that is part of the PSL Laser Area Enclosure. The retrofit is to ensure emergency egress under previously unforeseen circumstances.

## 2. Introduction

The aLIGO PSL at the observatories resides in the Laser Area Enclosure (LAE) within the LVEA. Access to the LAE is via an air shower. To initiate the air shower sequence a button must be pressed. The controller then unlocks the front door. One then enters the air shower, the front door is locked, and the blowers turn on for a short time. When the blowers stop, the rear door is unlocked and one steps into the Ante-Room.

## 3. Air Shower Retrofit

Both observatories have experienced occasions when personnel have been inadvertently trapped in the air shower. To remedy this, a stop button was fitted to the inside of the air shower and Ante-Room that disables the air shower controller, telling it to open both doors of the air shower.

To ensure emergency egress from the air shower, another retrofit is suggested. A relay shall be installed in the control line to the magnetic latches on the air shower doors. This relay would be activated by hitting the existing stop button(s). This would disable the magnetic latches holding the doors closed. Then both the control logic holding the door closed and the physical mechanism holding the door closed would be disabled, thus allowing the door to be opened.

Currently both observatories have the stop button. All three installations of the air shower shall have the same retrofit carried out.