

## **DISCLAIMER**

**SRC Technical Notes are informal memos intended for internal communication and documentation of work in progress. These notes are not necessarily definitive and have not undergone a pre-publication review. If you rely on this note for purposes other than its intended use, you assume all risk associated with such use.**

|   |                                 |                       |
|---|---------------------------------|-----------------------|
| <b>University of Wisconsin-Synchrotron Radiation Center<br/>Technical Note</b>  | <b>File Number</b><br>SRC-174   | <b>Page</b><br>1 of 1 |
| <b>Subject:</b> Emergency Air Supply Louvers and<br>Aladdin Vault Temperature Stability   | <b>Name:</b> Mike Fisher        |                       |
|   | <b>Date:</b> September 18, 1996 |                       |
| <p>The stability of the ambient temperature in the Aladdin vault plays an important role in the overall positional stability of the accelerator and beamlines. Beam orbit stability is influenced by the positional stability of the individual components that make up the accelerator. This effect will become even more significant once a real-time orbit position control system is implemented in the near future. The feedback system depends on a stable beam position monitoring system.</p> <p>There was a significant effort in 1994 directed at improving the temperature stability of the vault. A programmable PID controller was implemented that reduced short term temperature fluctuations. However, seasonal changes still occur in the temperature distribution of the vault. This is particularly evident along the west wall of the vault near the emergency air supply louvers. Cold air entering the louvers during the winter (especially on windy days) causes the temperature in this region to be colder than other areas of the vault.</p> <p>Two emergency air supply louvers are located on the west wall of the vault. Each set of louvers measures 136 inch x 48 inch in area. In an emergency, Air Handling Unit # 1 is reversed and fresh air is drawn into the vault through these louvers at a rate of 44,000 cfm. An external windbreak will be constructed in front of each set of louvers to reduce the leakage of cold air into the vault during the winter months. Sufficient space will be left so that the louvers can still function as a source of fresh air in an emergency.</p> |                                 |                       |