

**The 21 Century COE Project**  
**Exploring New Science by Bridging Particle-Matter Hierarchy**

**Short-term Foreign Researchers**

**Research Report**

**Name:** Steven C. Berridge

**Affiliation:** University of Tennessee, USA

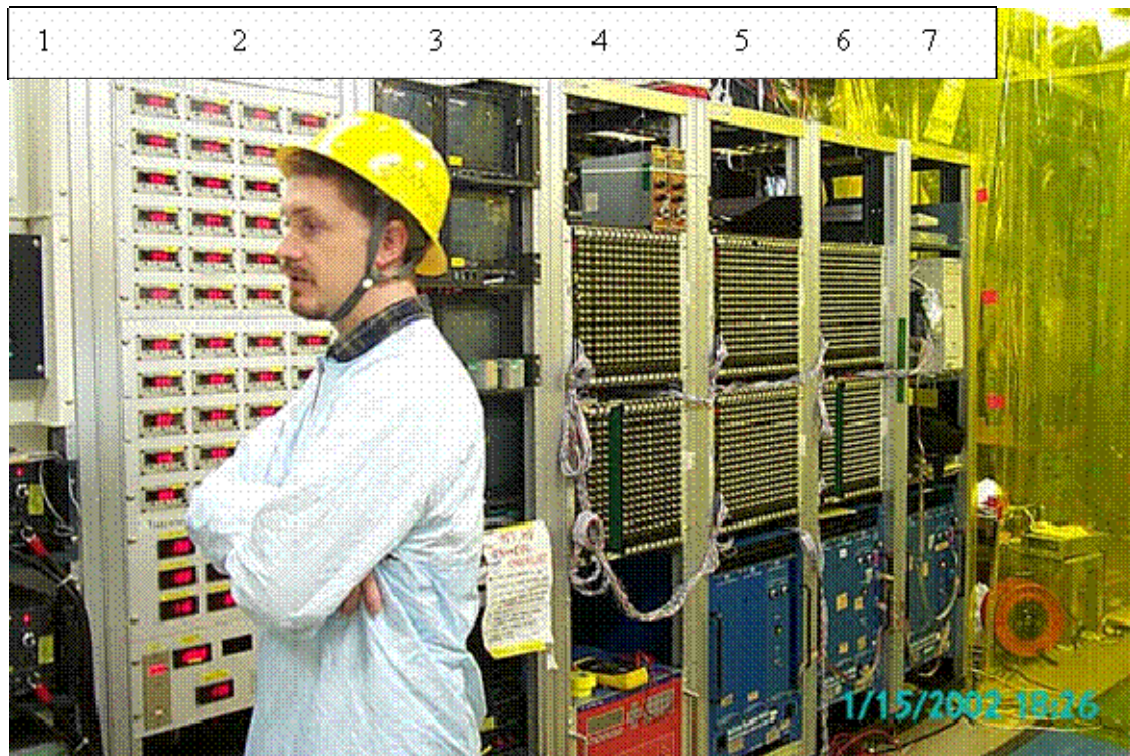
**Host Researcher in Tohoku University:** Atsuto Suzuki

**Your Stay Period in Japan:** From 08Jan04 to 19Jan04

**Title of Research in Japan:**

KamLAND High Voltage Power Supply Upgrade

The purpose of my trip was to oversee and participate in the installation of the new Universal Voltronics High Voltage system. Part of the US Kamland collaboration (primarily the University of Tennessee and LBL) had proposed that we upgrade the existing power supply system with a single new system. The old one contained Ri'nEi power supplies and distributors, old LeCroy 1440s, a CAEN and a few single channel supplies. This made the system difficult to maintain and operate with so many different types of power supplies and interfaces. The new system was all from one manufacturer with a single software interface making it much more simple to operate and maintain. The old system is shown here:



The new Universal Voltronics system is shown here:



I created a detailed Installation plan which was approved by the proposing members and the collaboration council. It was executed perfectly with little scheduling delay and the new system was installed as planned. Many thanks go to all those who worked on the project both from the US and Japanese side. The new system is extremely stable and with the new calibrations that were done, I believe it is a much improved system. Also many thanks to Kengo Nakamura for writing the new simplified software interface.

Sincerely,

Steven C. Berridge

Research Engineer

University of Tennessee

March 24, 2004