



Stern Laboratories Inc.

1590 Burlington Street East
Hamilton Ontario Canada

WELCOME TO STERN LABORATORIES

Presentation to CNSC & US NRC

Inspection Visit to Stern Labs

March 17, 2004



Stern Laboratories Inc.

- Serving the Nuclear Industry in Canada and many other countries for over 40 years, first as Westinghouse Canada and now as Stern Laboratories.
- Employee owned private corporation since 1988.
- Experienced staff of professional engineers and engineering technologists.
- Quality Assurance Program (documented in QAP-01) designed to meet ISO 9001-1994 or 10CFR50 Appendix B.
- Qualification Testing performed in accordance with CSA quality standard N286 Clause 6.



Stern Laboratories Inc.

- Design and construction of experimental facilities to simulate heat transport systems, safety systems, fuel and fuel channel components for normal operation as well as accident scenarios.
- Conduct experiments under contract to utilities, reactor and fuel designers and vendors, government agencies, and other laboratories for:
 - development and validation of modelling codes.
 - determination of Critical Heat Flux, Boiling Transition or DNB.
 - reliability and safety of equipment and processes.
 - equipment qualification.
- Design and manufacture specialized equipment, such as nuclear fuel simulators and in-bay inspection tools.



CRITICAL POWER TESTS

- Critical Heat Flux tests are performed in a full scale, horizontal CANDU fuel channel facility.
- Boiling Transition tests are performed in a full scale, vertical BWR loop facility (up to 10 X 10).
- Departure from Nucleate Boiling tests have been performed in a vertical PWR loop facility (6 X 6).

16 MW DC POWER SUPPLY

- 11 independently controlled power zones.
- operating at 0 to 330 volts to neutral.
- on-line variation of the power distribution applied to test loads.
- accurate power metering.
- computer control of power.



DATA ACQUISITION

- Specialized data acquisition system currently has 600 A/D channels with signal conditioning for thermocouples, RTD's, pressure transmitters, strain gauges, etc., suitable for steady-state or transient experiments, with scanning speeds typically up to 20 Hz per channel.
- High speed Zonic Workstation 7000 Signal Analyzer system capable of recording and processing up to 48 analog input channels at frequencies up to 5 kHz per channel.
- PC based MicroStar system with 96 analog input channels capable of scanning at frequencies up to 769 kHz.
- Specialized software for on-line data acquisition and process control, post-test data analyses, graphical output and communications.



Quality Policy

- ***Stern Laboratories is dedicated to providing quality products and services which meet or exceed the expectations and contractual requirements of our customers and are consistent with professional standards and ethics.***
- ***We employ experienced engineers, technologists and technicians who are committed to a professional team approach to quality that stimulates continuous improvement in the products and services provided to our customers.***



QUALITY ASSURANCE

- Documented quality system
- Documented & approved procedures
- Control of measuring & inspection equipment
- Inspection & testing to approved procedures
- Nonconformance procedures
- Qualified personnel
- Design control
- Document control
- Approved suppliers

