

# Nuclear Science and Technology Division

## Document Review Record

**To be completed by author**

Date Submitted: September 23, 2004 Account Number: 3530-8062

Author(s): Raymond G. Wymer

Title: International Virtual Laboratory for Environmental Technology (IVLET)

Peer Reviewer(s):

Final Editing by: Pick from list Other:

The process for clearance and release ensures that (1) the technical content is sound, (2) the government's patent interests are considered, (3) the information released to the public is not classified or otherwise controlled, and (4) DOE regulations are met - including the requirement that DOE's Office of Scientific and Technical Information (OSTI) receive a PDF copy of our technical reports and full conference papers (but not abstracts or viewgraphs). These four steps are carried out by the originating division, the ORNL Patent Counsel (if applicable), an Authorized Derivative Classifier and/or Classification Officer if work involves a non-DUSA (Designated Unclassified Subject Area), and the ORNL Office of Technical Information and Classification (OTIC). ORNL now uses an electronic process (CPRR database) to register documents.

**Patent Review**

a. Patent Review Waived:  Yes  No

Reason:  Previously Reviewed and Cleared by Patent Office\*  Nonpatentable Subject Matter

\*Cite or attach the previous review and/or case documentation

RGW (Author initials)  
BEY (Group leader initials)  
BEY (Patent officer signature)

b. Requires Review by Patent Office:  Yes

**Classification/Sensitive Information Review**

a. DUSA, Classification Review Not Required:  Yes  No

RGW (Author initials)  
BEY (Group leader initials)

b. Potentially Classified or Sensitive, Requires Review by ADC:  Yes  No

Contains Classified/Sensitive Information:  Yes  No

Classification Level: \_\_\_\_\_

\_\_\_\_\_ (ADC signature)

Export-Controlled Information:  Yes  No

RGW (Author initials)  
BEY (Group leader initials)

Author Final Approval: R.G. Wymer Sept 23, 2004  
by nst Date

Group Leader Final Approval: \_\_\_\_\_ Date

Program Approval (if required): M.J. Haire 9/22/04  
Date

TI Manager Approval: \_\_\_\_\_ Date

Division Director Approval: \_\_\_\_\_ Date

# International Virtual Laboratory for Environmental Technology (IVLET)

Raymond G. Wymer

Russian–American Workshop on Use of Depleted  
Uranium and Review of International Science and  
Technology Center (ISTC) Projects

October 18–21, 2004

Moscow, Russia

**Oak Ridge National Laboratory**

P.O. Box 2008, Oak Ridge, Tennessee 37831-6166

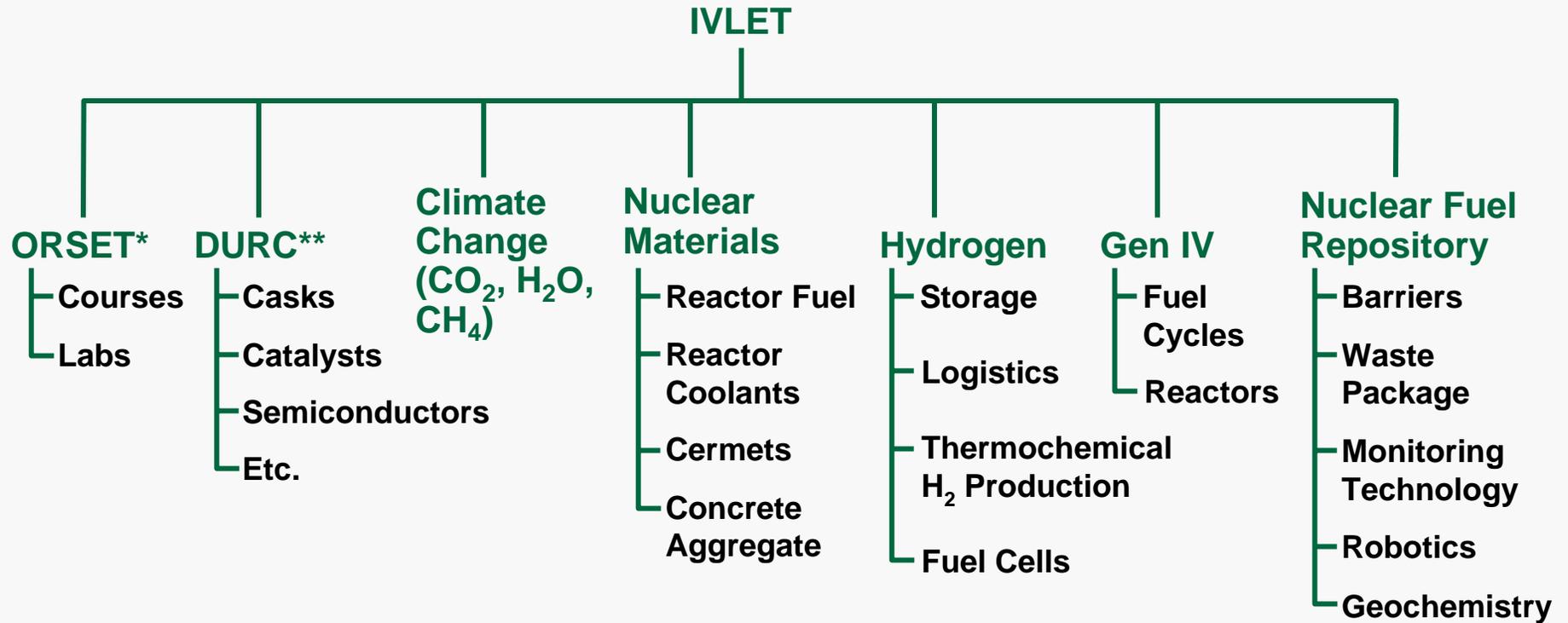
United States of America

E-mail: [rgwymer@prodigy.net](mailto:rgwymer@prodigy.net)

# IVLET Concept

- **It is proposed that Oak Ridge National Laboratory (ORNL) and Russia collaborate to establish IVLET**
- **This is not yet a formal ORNL proposal**
- **IVLET is “virtual” because it would use existing laboratories and other facilities in Russia and in the United States**
- **IVLET would include environmental programs, Oak Ridge School of Environmental Technology (ORSET) and Depleted Uranium Research Center (DURC)**
- **National laboratories and institutes would retain their autonomy**

# IVLET



\*Oak Ridge School of Environmental Technology

\*\*Depleted Uranium Research Center

**OAK RIDGE NATIONAL LABORATORY**  
**U. S. DEPARTMENT OF ENERGY**



# Functions of IVLET

- **Manage and coordinate international interfaces**
- **Facilitate funding through an integrated approach**
- **Promote research on uses of depleted uranium (DU), nuclear, and hydrogen technologies**
- **Enhance synergy among the parts of IVLET**
- **Promote and demonstrate beneficial and environmentally friendly large-scale uses of DU**

# Content and Structure of IVLET

- **Oak Ridge School of Environmental Technology**
- **Depleted Uranium Research Center**
- **Cask development**
- **Thermochemical production of hydrogen and fuel cells**
- **Cermets and cements**
- **Geochemistry**
- **Generation IV reactor fuel cycles**

# Benefits of IVLET

- **Russian ability to conduct work with radioactivity more easily than U.S.**
- **Access to U.S. user facilities—microscopes, accelerators, computers**
- **Less expensive to conduct work in Russia, U.S. has expensive research tools**
- **Strong synergy between U.S. and Russian environmental programs**
- **Provide a management tool to oversee and manage Russia/U.S. interactions**
- **Provide gainful employment for top-notch Russian scientists and engineers**

# Path Forward

- **Discuss concept with appropriate Russian and U.S. counterparts**
- **Decide on whether or not to proceed with concept**
- **If it is desirable to proceed:**
  - **Agree on next governmental contacts**
  - **Modify and improve concept as appropriate**
  - **Discuss IVLET management organizational structure**

# ORSET

- **An international school for environmental management conducted at ORNL to:**
  - **Help provide a cadre capable of managing hazardous and radioactive materials**
  - **Help create an international network of people with knowledge of laws and regulations relating to the environment**

## ORSET (continued)

- **IVLET would do the above by:**
  - **Providing practical, laboratory environment protection and management skills**
  - **Providing educational courses on U.S. and International Atomic Energy Agency environmental regulations and guidelines**
  - **Facilitating visits to private industrial organizations performing environmental cleanup operations**
  - **Providing the resources needed to care for participants (housing assistance, language assistance, some financial support in special cases)**

# DURC

- **A center for management, technical oversight, and communication of the joint U.S. Department of Energy-Russian Academy of Science research on DU**
  - **Initial focus would be on spent nuclear fuel storage and transport cask development**
  - **An integral part of IVLET**
  - **Would help provide a stable funding environment for the more basic research on uses of DU**