

## Professional Enrichment Program (Continuing Education Course)

**Sunday, January 27, 2019 from 8:00 am to 5:00 pm**  
**Marriott Key West Beachside, 3841 North Roosevelt Boulevard**  
**Key West, Florida 33040 (phone: 305-296-8100)**

PEP Continuing Education Courses are scheduled prior to the 2019 ISOE North American ALARA Symposium in the same hotel. Radiation Protection professionals from Canada, Mexico, U.S. and other countries world-wide are planning to attend and participate. PEP Course Co-Academic Deans: Richard Doty, PhD, NATC External Affairs Coordinator, College of Engineering, University of Illinois and Jason Harris, PhD, NATC UNSCEAR Effluents Coordinator, Purdue University Health Physics Program. Registrants will also receive a certificate showing the completion of the continuing education course. Contact Dr. Richard Doty at [rldphd@gmail.com](mailto:rldphd@gmail.com) or [dmiller@illinois.edu](mailto:dmiller@illinois.edu) if you have any questions. Registration: ISOE Website [isoe-network.net](http://www.isoe-network.net)

PEP Objectives: To provide utility and regulatory health physicists with the latest technology in occupational dose reduction available through the global ISOE program:

- To brief RPMs and their ALARA staff on the current and future ALARA Tools (new technology) to support ISOE Members' quest for World Class ALARA Performance in refueling outages with special emphasis this year on technical considerations on accident range effluent monitors, Virtual Reality and Artificial Intelligence applications for NPPs, verification of adequacy of temporary shielding and 3D isotopic mapping using pixelated CZT technology and chemical engineering aspects of source term reduction at NPPs.
- To train attendees on ALARA data and reports available on the ISOE Website at <http://www.isoe-network.net>
- To learn how ALARA techniques have achieved significant outage dose reduction and substantial cost savings at operating BWRs, PWRs and CANDUs.
- To provide a training session on how to enter ISOE annual site dose and RWP planning data to assist site ALARA & outage planning professional in refueling/maintenance/refurbishment outages

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### AGENDA:

- 8:00 am Welcome/PEP Overview  
Richard Doty, PhD, NATC External Affairs Director, University of Illinois
- 8:10 am Considerations on Accident Range Effluent Monitoring at Nuclear Power Plants  
Steven Garry, NRR, U.S. Nuclear Regulatory Commission
- 10:15 am Coffee Break
- 10:30 am Current Enabling Technologies Suitable for Radiation Monitoring including Accident Range Effluents from Nuclear Plants (including drones, cloud-based data, GPS, VR/AR and robotics)  
Professor Rizwan Uddin, Head, Department of Nuclear, Plasma and Radiological Engineering, University of Illinois
- 12:00 pm Lunch on your own
- 13:00 pm Solving Common Problems with Degrading Radiation Source Term:  
How to Reverse the Trend  
Patricia Robinson, President, n,p Energy & Paul Skinner, former Turkey Point Chemistry Supervisor
- 14:00 pm Technology Improvements from Mirion Plant-Wide Radiation Monitoring System Replacement at Cook Nuclear Plant Units 1, 2
- 14:30 pm Coffee Break
- 14:45pm Pixelated CZT 3D Technology, Past and Future NPP Applications  
Willy Kaye, President, H3D, Inc.
- 15:45 pm ISOE Website Features for ALARA Planners and RPMs, including ISOE Sister Plant Task and Dose Database for Use in Outage RWP Preparation  
David W. Miller, NATC ISOE Regional Director, NPRES, College of Engineering, University of Illinois
- 16:00 pm The Logistics of Building an Energy Infrastructure on Mars  
Dr. Dennis Chamberland, Principal Investigator, NASA Biomedical Engineering and Research Lab, John F. Kennedy Space Center, Florida
- 17:00 pm 2019 ISOE Initiatives & PEP Course Summary – Adjournment  
Richard Doty, PhD, NATC External Affairs Director, University of Illinois