

Interagency Workshop on Monitoring for Early Detection of Underground Leaks at Nuclear Facilities

Focus: This workshop will assess the feasibility of applying geophysical and other monitoring methods to the early detection of underground leaks at nuclear facilities.

Objective: The past decade has witnessed the increasing use of geophysical and hydrogeophysical techniques for monitoring moisture movement and biogeochemical changes in shallow subsurface environments. This workshop will bring together experts in the use of geophysical and hydrogeophysical methods in a variety of disciplines (e.g., site characterization, environmental remediation, industrial leak detection) to discuss methods and strategies applicable to detection of subsurface leaks at NPPs and other nuclear facilities. Specific methods and applications of those methods will be evaluated with the intention of selecting a few techniques that are (1) candidates for future field tests; or (2) are very promising but require further study and development. Strategies for monitoring network design and deployment at operating nuclear facilities will be discussed.

Communication of Results: The results of this workshop will be summarized in an appendix to the NRC staff White Paper entitled: Monitoring for Early Leak detection at Nuclear Power Plants: External to Structures.

Date: Wednesday, February 15, 2012

Time: 8:30 to 5:00

Location: NRC Office of Research Building, 21 Church St, Rockville, MD, 6th floor
Conference room 6B-1
Please Note this is NOT the main Headquarters complex at Whiteflint

Seating is limited to about 40 Persons, Please contact Mark Fuhrmann if you plan to attend
mark.fuhrmann@nrc.gov 301-251-7472

Remote Access: Phone bridgeline: 877-917-9484, Passcode: 3736146
GoToMeeting <https://www1.gotomeeting.com/register/552468176>

Potential Participants/Speakers from: U S Geological Survey, DOE National Laboratories, Private Consultants, the Nuclear Power Industry, Electric Power Research Institute, Universities, U S Environmental Protection Agency, U S Department of Energy, and U S Nuclear Regulatory Commission

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| 8:30 | Welcome and Introduction | Richard Correia, NRC |
| 8:45 | Leaks at Nuclear Power Plants | James Riley, NEI |
| 9:15 | Panel Discussion "Experience with Leaks at Various Types of Nuclear Facilities" | NRR/Regions/Others |
| 10:00 | Break | |
| 10:15 | Key Concepts for Early Leak Detection and Technical Questions | Fuhrmann/Kanney NRC |
| 10:30 | Soil Physics of Leak Detection Using Geoelectrical Methods | Lee Slater, Rutgers U. |
| 11:00 | Industrial Applications of Real-Time Electrical Monitoring | Dale Rucker, HGI |
| 11:30 | 3D Time-Lapse Electrical Resistivity Imaging: Field Examples and Application Potential in Industrial Environments | Tim Johnson, PNNL |
| 12:00 | Fiber-Optic Distributed Temperature Sensing: Theory and Application to Monitoring Problems | Fred Day-Lewis, USGS |
| 12:30 | Lunch Brought in | |
| 1:30 | Finding Leaks Using Hydrogeophysical Data and Numerical Models | Stefan Finsterle, LBNL |
| 2:00 | Assessing the Likely Value of Geophysical Data for Decision Support | Ty Ferré, U. of Arizona |
| 2:30 | EPRI Groundwater Protection Program and Advanced Technologies for Groundwater Monitoring: In-situ and Automatic Groundwater Monitoring Technology Research | Karen Kim, EPRI |
| 3:00 | Sensors for Tritium Detection | Shuh-Haw Sheen, ANL |
| 3:30 | Break | |
| 3:45 | General Discussion: "Next Steps for Early Leak Detection" What methods are most promising? Is EM noise a show-stopper? What is a leak and what is rain? What is needed next? | |
| 5:00 | Adjourn | |