

Braidwood Station Tritium Monitoring Update to NRC and IEMA

November 2005

D-52

Topics

- Background
- May 2005 Sampling Results
- Development of Extended Sampling Plan
- Expanded Sampling and Characterization
- November 2005 Sampling Results
- Current Actions

Background

- Identified on-site low level tritium in storm water drainage ditch in northwest portion of property
 - 04/01/05 (539 pCi/L)
 - Background approximately 200-300 pCi/l
 - Communications
 - NRC, IEMA, IEPA
 - Tracked back to area east of switchyard
 - Increased existing sampling frequency of ditch
 - Developed additional sampling plan
 - Included installation of new monitoring wells
 - Visual inspection of vacuum breaker pits

Background Cont'd

- May 2005 on site vacuum breaker pit inspection
 - Vacuum Breaker #1
 - Leakage identified during observation
 - Approximately 20 drops per minute
 - Isolated immediately
 - Pit sample 51295 pCi/L — Minimal Diffusion
 - Vacuum Breaker #2
 - Showed no active leakage
 - Vacuum Breaker #3
 - Identified standing water in Pit
 - Sample result – 1521 pCi/L
 - No apparent leakage – likely from groundwater ✓

Development of Extended Sampling Plan

- Developed with assistance from professional environmental hydrologist (June 2005)
- Installed additional sampling wells & established sampling frequency
 - 8 wells installed
 - Located to identify potential sources and pathways
 - Sampling began late September through late October 2005
- Initial results
 - Elevated tritium in two wells (MW-103 and 113)
 - Maximum 4480 pCi/L at MW-113; north of Vacuum Breaker 2

Expanded Sampling & Characterization

- Multi-disciplined team developed
 - On-site & off-site Exelon resources
 - Contractor specialists
 - Senior management leadership
- Objectives of team
 - Identify historical and current sources
 - Determine reportability requirements
 - Identification of potential remediation options
 - Development of communication strategy

Expanded Sampling Cont'd

- Characterized relevant historical leakage areas
 - Vacuum Breaker 3 (1998)
 - Vacuum Breaker 2 (2000)
 - Vacuum Breaker 1 (2005)
- Installed sampling wells along blowdown line to check for active leakage on site property
 - Approximate 100 foot increments where access permitted
- Additional sampling wells established around vacuum breakers and historical leaks
 - Includes property line along Smiley Road

November 2005 Sampling Results

- Areas affected by vacuum breaker leaks
 - Sampling in area of Vacuum Breaker 3
 - 729 – 58489 pCi/l
 - Sampling in area of Vacuum Breaker 2
 - 207 – 6193 pCi/l
 - Sampling in area of Vacuum Breaker 1
 - 206 – 1194 pCi/l
- Blowdown line samples
 - Highest 4058 pCi/l (near vacuum breaker 3)
 - All others approximately background
- Results believed to be from historical leaks

Current Actions

- Determine active leakage or not
 - Additional sampling
 - Third party review
- Implement offsite sampling plan
 - Requesting permission from property owner
- Implement remediation plan
 - Short term in progress today
 - Long term actions under development
- Ongoing corrective actions will likely include enhanced routine surveillances
- Communications
 - NRC, IEMA, IEPA
 - Braidwood Mayor
 - State officials
 - Potentially affected residents
- Provide periodic updates to resident inspectors