

Hanford 300 Area ROD

Briefing to the Hanford Advisory Board

March 6, 2014

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Recap of the 300 Area ROD

Primary new concept -- Uranium Sequestration:

- Purpose: Accelerate restoration of groundwater uranium contamination.
- Protect groundwater from downward leaching from the vadose zone (overlying soil).
- Add phosphate to chemically bond with uranium into geologically stable autunite. Does not dissolve.
- Dissolve phosphate in water, apply at ground surface, inject into the ground, inject into the deep part of the vadose zone that is periodically rewetted by rising groundwater, inject into top of the aquifer.

- 300-FF-1 ROD 1996 (liquid waste disposal sites).
Five year reviews identified as non-protective.
Amended to add uranium sequestration.
- 300-FF-5 Interim Action ROD 1996 (groundwater).
Superseded by the new 2013 ROD.
- 300-FF-2 Interim Action ROD 2001 (waste sites).
Superseded by the new 2013 ROD.

Main elements of Selected Remedies (1of2)

- Remove-treat-dispose. Very similar to interim action.
 - 0-15' Cleanup Level (CUL) – protect direct exposure.
 - All depths CUL – protection of groundwater.
- Groundwater Restoration – protect to drinking water standards.
 - Groundwater Monitored Natural Attenuation until standards are met. Monitoring plumes.
- Uranium Sequestration.
- Temporary surface barriers and pipeline void filling.
 - Interim protection until Battelle vacates.

Main elements of Selected Remedies (2of2)

- Industrial use based CULs, core 300 Area Industrial Complex and 618-11.
- Unrestricted everywhere else.
- Institutional controls.

Until groundwater meets standards.

Until waste site remediation can be completed.

Industrial cleanup area waste sites that don't meet unrestricted use.

Primary ICs are industrial human use, no irrigation, water drainage away from waste sites.

300 Area issues resolved that assist upcoming 100 Area

- Residential direct exposure cleanup levels.
- Irrigation/infiltration rate.
- Radionuclides – more conservative of 15 mrem/yr dose or 1-in-10,000 = 10^{-4} risk.
- Direct exposure is top 15' human and eco.
- RI/FS (Remedial Investigation/Feasibility Study) is the risk assessment.
- Waste site remediation-still RTD (deep uranium-only via sequestration is the exception).
- Leach modeling with STOMP (Subsurface Transport Over Multiple Phases)
- ARARs list.
- MTCA methods to calculate MTCA risk-based contaminant cleanup levels.

Now

- ROD pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0087180
- Developing the Work Plan for implementation.
- Interim waste site actions have continued with immediate adoption of final cleanup levels.
- Building cleanup under Action Memos has continued, no overlap with ROD, no changes.