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From: [REDACTED]

Sent: Tuesday, September 14, 2010 12:08 PM

To: [REDACTED];

Subject: recommendations for RADON release projections

This note is to review several recommendations I have made on various documents regarding the contract for evaluating radon release emission scenarios. Radon is a special interest of mine, since [REDACTED] and I once held the contract for collecting the on-site radon samples.

- 1) No action scenario. Evaluate radon releases taking into account the recently released information that many peizometer tubes are still in the IWCS cover( documentation providing tube locations is on USACE web site). Assume a worst case that the bentonite seals have dried out and shrunk and soil gases including radon can exhaust from the tubes.
- 2) All partial removal scenarios: In all these scenarios, install groundwater extraction wells in each IWCS quadrant north of Building 411 because that would not be excavated in these scenarios. These wells would be deep enough to extract groundwater in order to guarantee a negative groundwater gradient at the clay cut off walls to prevent any leakage.

Consider 2 sub-cases of Hydraulic mining of residues inside a negative pressure enclosure:

- a) Immediate stabilization with concrete and shipment off site and,
- b) Separation of radium contaminated sulfates which would then be sealed into containers. This separation would remove the source of new radon from the tailings which could be sent to an existing uranium mill for uranium extraction and placement of tailings in that facilities' tailing piles.