



MEMO

TO: AWE Work Group
FROM: John Mauro, SC&A
DATE: September 4, 2012
SUBJECT: DuPont Deepwater Works Issues Matrix

Attached is the DuPont Deepwater Works Issues Matrix that was provided to the AWE Work Group in a memo dated August 15, 2011, along with issues matrices for several AWE sites. No responses or updates have been received on the DuPont Issues Matrix since that date.

DuPont Deepwater Works Issues Matrix

Finding or Observation	SC&A Review ^a	NIOSH Initial Response	Work Group Position Based on NIOSH Response
Finding 1	The site profile should discuss the degree to which the air sampling data, which was collected in 1944 and 1945, can be used to reasonably bound doses in the earlier years of operation (e.g., 1942–1943).		
Finding 2	We would request that the site profile discuss the levels of surface contamination at the facility and explain that, at these levels, the default ingestion rate of 0.5 mg/day, which is inherent to OCAS-TIB-009, applies to this facility. NIOSH should also describe how the ingestion intake in Table 1 was calculated.		
Finding 3	It appears that uranium metal was produced at the site using the UF ₄ to U magnesium bomb reduction process, which, because of the Putzier effect, could have produced uranium ingots that were associated with external beta radiation fields that were 10 to 20 times greater than those adopted in the site profile.		
Finding 4	There seems to be a substantial disparity between the explanation of how the annual photon doses to operators were derived and the actual values employed in the site profile.		
Finding 5	There seems to be a substantial disparity between the explanation of how the annual contact doses to operators were derived and the actual values employed in the site profile. In addition, justification should be provided as to why TBD-6000 default values should not be used at DuPont since no site data is available for external exposure during the operating period.		
Finding 6	Assuming 50% of the beta/gamma dose rate measured at 3 ft from a surface is 50% from gamma and 50% from beta does not appear to be appropriate. In addition, beta dose cannot contribute significantly to whole-body dose.		
Finding 7	The development of the photon dose is convoluted and not scientifically sound. A simpler approach would be to assume the deep dose rate was 0.05 mrad/hr, based on measurements at 3 ft from contaminated surfaces, and pro-rate this dose rate between beta and gamma based on Table 3.10 of TBD-6000.		

a – SC&A 2011. *Review of the NIOSH Site Profile for DuPont Chambers Works, Deepwater, NJ*, SCA-TR-SP2011-0035, Rev. 0. SC&A, Inc., Vienna, Virginia. August 12, 2011.

OCAS 2004. *Estimation of Ingestion Intakes*. OCAS-TIB-009, Rev. 0. National Institute for Occupational Health and Safety (NIOSH), Office of Compensation Analysis and Support (OCAS), Cincinnati, Ohio. April 13, 2004.

NOTICE: This report has been reviewed for Privacy Act information and has been cleared for distribution. However, this report is pre-decisional and has not been reviewed by the Advisory Board on Radiation and Worker Health for factual accuracy or applicability within the requirements of 42 CFR 82.