DEPARTMENT OF HEALTH & HUMAN SERVICES

Memorandum

To: Kansas City Plant (KCP) Working Group

From: Peter Darnell, DCAS Health Physicist
              Jackson Ellis, ORAU Team Health Physicist
              Pat McCloskey, ORAU Team Health Physicist
              Mutty Sharfi, ORAU Team Principal AWE Dosimetrist

Subject: Revision to KCP Site Profile

Date: March 14, 2016

BACKGROUND

NIOSH revised the KCP Site profile (TBD) in 2006.[1] Since then, there have been a number of data capture efforts in support of the Special Exposure Cohort (SEC) work. The SEC process concluded November 19, 2015 with the resolution of the SEC matrix issues and agreement to move remaining issues to the TBD Issues Matrix. This memo in conjunction with the Issues Matrix describes NIOSH's plan to incorporate information obtained since 2006 into a revision of the KCP TBD.

SEC2 and SEC13, Worker Location, Job Category, and Coworker Model including Mg-Th Alloy operations

One of the goals of the KCP Working Group (WG) was to verify sufficient accuracy of existing employee exposure information. The WG examined the types of radiological operations performed, personnel movement throughout the site, monitoring records, and the accuracy and

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[1] Site Research Database (SRDB) Reference Identification Number (Ref ID) 20217

applicability of the existing coworker model. NIOSH and the WG determined that some of the information discovered was not included in the TBD. NIOSH will add the following operations and exposure bounding methods to the TBD.

- Natural Uranium Operations from 5/1/50 to 2/28/55, bounded using Battelle TBD-6000 methodology
- Post Operations Period from 3/1/55 to 8/11/59, bounded using the maximum gross-alpha air sample, 49 pCi/m^3
- Tritium Water Operations (tritium monitors) bounding scenario uses 400 ml bottle of tritiated water spilled over a work year and absorbed by a worker (6.66 mrem/year dose applied to all workers), and Nickel 63 Operations (no dose assigned) from 1/1/59 to 12/31/75
- Magnesium Thorium Alloy Operations from 8/23/61 to 3/31/63 and from 8/28/70 to 12/31/77, bounded using administrative airborne limit of 3E-11 µCi/ml and OCAS-TIB-009 ingestion rate. TBD-6000 methodology used for worker classes with less exposure potential than machine operators. The period from 1963-1970 remain an issue for continued follow-up to ensure operations were in fact suspended.
- Post Operations Period from 1/1/78 to 5/31/84, bounded using maximum surface contamination from DU and D&D operations, and ORAUT-OTIB-0070
- Organically Bound Tritium Operations (hi-lo switch plates) from 1/1/63 to 12/31/68, bounded using maximum surface contamination transferred to skin and absorbed; 1.77 mrem/year dose applied to all workers.
- D&D from 6/1/84 through 9/3/86 bounded using Rockwell dosimetry data
- NIOSH and the WG evaluated operations associated with routine rad waste handling, rad-area maintenance, housekeeping and decontamination, and agreed to bound doses to all unmonitored personnel performing this work using the TBD's DU coworker model.

NIOSH determined, and the WG agreed, that KCP accurately transferred dosimetry information from raw exposure records into an electronic format. Therefore, the electronic database used by NIOSH to develop a coworker model presented in the TBD is sufficiently accurate.

SEC3, Chronic vs. Acute Intakes

NIOSH and the WG examined the potential for accidents/incidents or other causes for acute intakes at KCP, and are satisfied to date that a chronic exposure pattern best approximates the true exposure conditions for most workers with a potential for intakes. In addition, a chronic exposure pattern will approximate a series of acute intakes, making it appropriate for many scenarios when there is not specific information for a given individual. NIOSH will add to the

TBD this information regarding chronic vs. acute patterns of intake at KCP, to support the existing, validated coworker model.

Reviewed and Concurred by:

[Signature on File]

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Peter A. Darnell, CHP, RRPT
Health Physicist