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| Division of Compensation Analysis and Support Program Evaluation Report | Document Number: DCAS-PER-051 Effective Date: 3/4/2015 Revision No. 0 |
| Weldon Spring Plant | |
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| Supersedes: None | |
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| RECORD OF ISSUE/REVISIONS | | | |
|---------------------------|----------------|----------|---|
| ISSUE AUTHORIZATION DATE | EFFECTIVE DATE | REV. NO. | DESCRIPTION |
| 3/4/2015 | 3/4/2015 | 0 | New document to determine the effect of a revision to the Weldon Spring Plant TBD on previously completed claims. |

1.0 Description

A six section Technical Basis Document (TBD) for the Weldon Spring Plant (ORAUT-TKBS-0028) is used for conducting dose reconstructions. Sections 3 through 6 of the TBD that contain information used to calculate doses were revised between 1/30/2013 and 5/21/2013. This PER considers the effect of these changes on dose reconstructions that were completed using previous versions of the TBD.

2.0 Issue Evaluation

The revisions to the Weldon Spring Plant TBD included several changes that would cause an increase in calculated doses. Because the changes cover all operational time periods and job types, no claims were excluded from further evaluation based on job types or employment period. Thus, a detailed listing of changes made to the TBD is not necessary. Some of the changes that were made in the revision include:

- Change in assumed isotopic ratios for uranium ore concentrates;
- addition of a neutron to photon ratio;
- addition of a geometry correction factor for external dose;
- addition of a thoron exposure dose;
- Change in recycled uranium contaminate fractions; and,
- an increase in the radon exposure estimate.

3.0 Plan for Resolution or Corrective Action

A database search was conducted to develop of list of all claims that may have had employment at the Weldon Spring Plant. The search included employment at the

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“Weldon Spring Plant”, the “Weldon Spring Raffinate Pits” and the “Weldon Spring Quarry”. The original search resulted in 286 potentially affected claims.

Four claims were removed from the list that were completed using the revised TBD.

Five claims had been “pulled” from dose reconstruction by DOL and were removed from the list.

112 claims were removed because the previous dose reconstruction resulted in a probability of causation (POC) of 50% or greater.

46 of the remaining claims also had employment at Mallinckrodt and were part of the Special Exposure Cohort at that facility.

2 claims were excluded because they had no verified Weldon Spring employment and the Weldon Spring TBD was not used in the dose reconstruction.

2 claims were excluded because the employment only included the construction period prior to the start of any radiological operations.

This process left 115 claims to be evaluated further. During the evaluation, three more claims were removed from the list prior to being evaluated further. One was determined to meet the Mallinckrodt SEC criteria. A dose reconstruction for this claim was done prior to the designation of the Mallinckrodt SEC but no dose reconstruction would now be necessary for a compensation decision. The second was removed because the employment was outside the covered period for the site. The third claim was returned to NIOSH for a new dose reconstruction for other reasons. That claim will be revised using the current revision of the TBD.

Dose for the remaining 112 claims was recalculated using the current revisions of the TBD as well as any other applicable documents. The resulting Probability of Causation (POC) for 101 of the claims was below 45%. Eight of the claims resulted in a POC greater than 50%. The remaining three claims had a POC between 45% and 50%. For those 3 claims, IREP was run 30 times at 10,000 iterations per NIOSH procedures and the resulting POC was still less than 50% for the each of those claims.

NIOSH will provide the Department of Labor with the list of all the claims evaluated under this PER. Further, NIOSH will request that DOL return the 8 claims that would now result in a POC greater than 50%.