Office of Compensation Analysis and Support **Program Evaluation Report**	Document Number: OCAS-PER-029 Effective Date: 12/18/2007 Revision No. 0
Hanford TBD Revisions	Page 1 of 4

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RECORD OF ISSUE/REVISIONS			
ISSUE AUTHORIZATION DATE	**EFFECTIVE DATE**	**REV. NO.**	**DESCRIPTION**
12/18/2007	12/18/2007	0	New document to determine which previously completed claims require evaluation for the effect of revising the Hanford TBD.

1.0 Description

The documents listed in Table 1 have been utilized to perform dose reconstructions for claims from the Hanford site and the Pacific Northwest National Laboratory (PNNL)[1]. As indicated, each of these documents has been through at least one revision. Although many of the revisions only added annotation and attribution or corrected errors that did not affect the dose reconstruction methods, there were a number of substantial changes made that could affect the outcome of a dose reconstruction. The technical changes made in the revisions of these documents were reviewed to determine if any previously completed dose reconstruction would result in an increased dose using the current methods. The review was limited to identifying any increase, rather than an overall increase. Because changes that would cause dose to decrease were not reviewed, it is possible a new dose reconstruction would result in an overall decrease in dose even if it is determined that a new dose reconstruction is warranted.

Although dose estimates at Hanford could be affected by revisions to ORAUT-OTIB-0049 and ORAUT-OTIB-0052, issues pertaining to these documents were previously addressed in OCAS-PER-012 and OCAS-PER-014, respectively.

[1] Although separate Technical Basis Documents (TBD) exist for Hanford and PNNL, the PNNL TBD contains no dose reconstruction methodology. It simply indicates the Hanford TBD should be used. This evaluation is therefore based on Hanford documents with the understanding that it also applies to PNNL claims.

Table 1

Document	Current Revision	Date of revision
ORAUT-TKBS-0006-1	Rev. 3	5/23/2007
ORAUT-TKBS-0006-2	Rev. 1	5/17/2007
ORAUT-TKBS-0006-3	Rev. 1	4/11/2005
ORAUT-TKBS-0006-4	Rev. 2	6/5/2007
ORAUT-TKBS-0006-5	Rev. 2	6/22/2007
ORAUT-TKBS-0006-6	Rev. 3	6/5/2007
ORAUT-OTIB-0030	Rev.0 PC-1	11/7/2006
ORAUT-OTIB-0039	Rev. 1	10/1/2007
ORAUT-OTIB-0054	Rev. 0 PC-1	11/19/2007

2.0 Issue Evaluation

Internal Dose

Section 5 of the TBD (ORAUT-TKBS-0006-5, Internal Dose) contains the most significant changes. The dose estimate for unmonitored workers changed significantly in revision 1 and again in revision 2. The description of an unmonitored worker has not changed but the isotopic mix as well as the assumed intake of those isotopes has changed. The effect of these changes on dose estimates varies on a case by case basis and can not be determined without a new dose estimate. Therefore, dose estimates completed prior to the issuance of revision 3 on 6/22/2007 that contained an unmonitored internal dose estimate from the TBD will require a new dose estimate.

The method of estimating fission and activation product intakes was also modified in revision 2 of the internal section of the TBD. This modification requires the use of ORAUT-OTIB-0054 to determine these intakes from urinalysis. This method greatly changes the mix of isotopes and it is not possible to determine the affect on individual cases without a new dose estimate.

Revision 2 of this TBD also included thorium intakes for specific people listed in Table 5-25 of the TBD. The TBD also indicates if building information is not available, but there is evidence that a person worked with uranium in the 300 Area, 1950-1970, it is favorable to claimants to assume exposure to thorium.

Revision 2 also added intakes of impurities present in U-233 intakes. These intakes are to be assigned to people with U-233 urinalysis. This affects a small number of people at the PUREX facility between 1965 and 1970.

ORAUT-OTIB-0039 describes co-worker data for internal dose. Co-worker data is used to assign dose to unmonitored workers. Since revision 2 of the TBD will require a new

dose estimate for claims with unmonitored dose, no evaluation of this OTIB is necessary for revisions issued prior to 6/22/2007. One revision was issued on 10/1/2007. Prior to that revision, the OTIB provided plutonium urinalysis data and the dose reconstructors were to determine an intake for type S plutonium using that data. Revision 1 of this document simply predetermined this intake using the same data. The predetermined intakes are a convenience rather than a change to methodology. Therefore, no additional claims need to be evaluated for changes to OTIB-0039.

ORAUT-OTIB-0054 provides a method for determining fission and activation product intakes from urinalysis. The use of this document for Hanford claims was instituted in revision 2 of the internal section of the TBD. Since that time, one page change has been made to OTIB-0054. This page change simply clarified issues on which the OTIB was previously silent. As such, there was no change to methods in the page change. The previous version was in effect when revision 2 to the TBD was issued. The effect of instituting the use of this document was discussed earlier as part of revision 2 to the TBD.

Revision 1 of the internal section of the TBD was issued on 11/24/2004. This revision changed methods for estimating some doses that could affect claims completed prior to 11/24/2004. There were changes to intakes for unmonitored workers but this was also changed again in revision 2 so no additional claims are affected. There was a change to assignment of fission and activation product intakes however, these too were changed again in revision 2 so no additional claims are affected. Lastly, there was an increase in the detection limit for plutonium urinalysis prior to 1949. This could affect the plutonium intake estimate if it were determined from urine samples taken prior to 1949.

Environmental Dose

ORAUT-TBKS-0006-4 is the environmental dose section of the Hanford TBD. The original version of this document listed annual intakes of various isotopes at a number of locations throughout the site. Revision 1 to this document dated 12/20/2006 eliminated most of these tables by choosing only the highest location on site for each isotope for each year. Since dose reconstructions performed now would use the highest value it is possible that estimates prior to 12/20/2006 used a lower value. However, most dose reconstructions were performed using the highest value in lieu of determining the appropriate location for the individual case. The individual dose estimates will therefore need to be reviewed to determine if a higher intake value would now be used.

External Dose

Several changes have been made to ORAUT-TKBS-0006-6 (external dose) and ORAUT-TIB-0030 (External co-worker dose). However, most of these changes represent a phased implementation. This is an approach of issuing a TBD with some sections marked “reserved” in order to allow the completion of claims unaffected by that aspect of dose reconstruction. A revision is later issued with the new information. This is not a modification to dose reconstruction methodology but rather a new method that provides a

means of completing claims that previously could not be completed. Therefore, there are no previously completed claims affected by this phased implementation.

The change that does not represent phased implementation is the incorporation of ORAUT-OTIB-0052 (Construction Trades Workers) adjustments in ORAUT-OTIB-0030. These changes are addressed in OCAS-PER-014 and do not need to be readdressed here.

3.0 Plan for Resolution or Corrective Action

There were 1190 Hanford or PNNL claims completed prior to 6/22/2007 with a probability of Causation below 50%. The dose reconstruction methodology of each will be reviewed to determine if a new dose reconstruction is necessary to determine if the revisions increase the dose estimate. The criteria for making this determination are:

1. Any of the claims assigned an unmonitored internal dose per the TBD require a new dose estimate.
2. Any of the claims assigned a fission and activation product dose based on urinalysis (or unmonitored dose) require a new dose estimate.
3. Any of the claims assigned a uranium intake from the buildings and time frames in Table 5-25 of ORAUT-TKBS-0006-5 rev. 2 require a new dose estimate. Also, if the building information is not available, but there is evidence that a person worked with uranium in the 300 Area between 1950 and 1970 and was assigned a uranium intake from that work, a new dose estimate is required.
4. Any claim with a U-233 intake assigned requires a new dose estimate.
5. Any claim assigned a plutonium intake based on pre-1949 urine samples requires a new dose estimate.
6. Any claim assigned an environmental intake less than that listed in ORAUT-TKBS-0006-4 revision 1 requires a new dose estimate.

NIOSH will review these dose reconstructions to determine if they meet any of the criteria listed above. NIOSH will provide DOL with the list of 1190 claims as well as a determination on each claim as to whether a new dose estimate is required. Documentation for each claim not requiring a new dose reconstruction will provide the basis for that determination.