

**Office of Compensation Analysis and Support**  
**Program Evaluation Report**

Document Number: OCAS-PER-030

Effective Date: 12/18/2007

Revision No. 0

**Savannah River Site TBD Revisions**

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**RECORD OF ISSUE/REVISIONS**

| <b>ISSUE<br/>AUTHORIZATION<br/>DATE</b> | <b>EFFECTIVE<br/>DATE</b> | <b>REV. NO.</b> | <b>DESCRIPTION</b>   |
|---|---------------------------|-----------------|--|
| 12/18/2007                              | 12/18/2007                | 0               | New document to determine which previously completed claims require evaluation for the effect of revising the Savannah River Site TBD. |

**1.0 Description**

The Savannah River Site Technical Basis Document (ORAUT-TKBS-0003) was originally issued on 7/15/2003 and has been revised three times as follows:

- Revision 1 was issued on 8/21/2003;
- Revision 2 was issued on 10/29/2004; and,
- revision 3 was issued on 4/5/2005.

While many of the revisions to this document corrected typographical errors or other errors that did not affect the dose reconstruction methods, some changes were made that could affect the outcome of a dose reconstruction. The new methods contained in the three revisions of the TBD were reviewed to determine if any previously completed dose reconstructions would result in an increased dose using current methods. The review was limited to evaluating individual increases, rather than an examination of the 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.

**2.0 Issue Evaluation**

Revision 1 contained the most extensive changes to dose reconstruction methodology. A summary of the changes made in revision 1 that could affect dose reconstructions is provided below:

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- Revision 0 required that urine samples be adjusted to a daily rate by assuming 1.4 liter per day standard rate. However, many samples were reported as activity per 1.5 liters. Revision 1 indicated that samples specified in this way could be considered to be a full day's excretion. Any samples specified as activity per 1.5 liters could have been reduced under revision 0 and would not be now. Therefore, claims completed prior to revision 1 being issued will have to be reviewed to determine if actual urine samples meeting this criterion were reduced.
- Revision 0 of provided a table that contained errors in the pre-calculated missed intakes for plutonium exposure. The values that were miscalculated in revision 0 were corrected in revision 1. All the values for type M plutonium were too high in revision 0 and the values for type S plutonium were too low. Because of this, claims that used the type S values from revision 0 will require a new dose estimate. Since the TBD did not require the use of these values, it is possible some estimates did not include this error. An review of the plutonium intakes will be necessary to determine which claims are affected.
- Some dose estimates include ambient external dose. The values in revision 0 assumed a 2000 hour work year. This was changed to 2500 hour work year in revision 1. Therefore, claims assigned ambient external dose using revision 0 will require a new dose estimate.
- Revision 0 of the TBD included a table of the maximum site wide ambient intakes of various isotopes. In that table, headings for plutonium and uranium were transposed. This was corrected in revision 1. Most dose estimates completed under revision 0 were performed with the aid of a computational tool. This tool created 7/25/2003 (10 days after revision 0 was issued) contained the appropriate values. However, claims completed using revision 0 must be reviewed to determine if the appropriate value was used.

Although two more revisions have been issued to the Savannah River Site TBD, the nature of the modifications made in these revisions do not require a review of completed dose reconstructions. The basis for this determination is as follows:

- Some of the changes in these two revisions represented phased implementations. In this approach, a TBD is issued with some sections either marked "reserved" or a specific issued is not covered in order to allow the completion of claims unaffected by that aspect of dose reconstruction. A revision is later issued with the new information so that the affected claims can be completed. These types of modifications do not require an evaluation of affected claims because there was no increase in dose, it is simply the implementation of a method where no method existed. This is the case with photofluorography implemented in revision 2, type

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S Ce-144 intakes implemented in revision 2 and internal dose from food stuffs implemented in revision 3. Prior to these revisions, no method existed for these issues and claims determined to be affected by them where held until a method could be developed and documented.

- One additional change that occurred in revision 2 that would increase dose for some claims. This was a change in the analogous organ table for x-rays. The analogous organ for liver, gall bladder and spleen was changed from ovaries to lung. Once the issue was discovered, the corrective action included using the appropriate values in dose estimates even before the TBD could be revised. Once that corrective action was in place, the few claims previous completed were evaluated in OCAS-PER-002. No further evaluation of this issue is performed here.

### **3.0 Plan for Resolution or Corrective Action**

There were 54 Savannah River Site claims completed prior to 8/21/2003 (issue date of revision 1) 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 external ambient dose from table C-19 of revision 0 will require a new dose estimate.
2. Any of the claims assigned a uranium or plutonium ambient intake from table C-17 of revision 0 will require a new dose estimate.
3. Any of the claim assigned missed type S plutonium intakes from table 4.4.3-1 of revision 0 will require a new dose estimate.
4. Any of the claims assigned a plutonium intake from urinalysis that had been adjusted to 1.4 liters per day may require a new dose estimate. A new estimate is required if the sample was reported as activity per 1.5 liters and it was reduced to 1.4 liters of daily excretion.

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 54 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.