

Division of Compensation Analysis and Support Program Evaluation Report	Document Number: DCAS-PER-046 Effective Date: 9/22/2015 Revision No. 0
Nevada Test Site	
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RECORD OF ISSUE/REVISIONS			
ISSUE AUTHORIZATION DATE	EFFECTIVE DATE	REV. NO.	DESCRIPTION
9/22/2015	9/22/2015	0	New document to determine the effect on previously completed claims due to a revision to the Nevada Test Site TBD.

1.0 Description

A six section Technical Basis Document (TBD) for the Nevada Test Site (ORAUT-TKBS-0008) is used for conducting dose reconstructions. A Program Evaluation Report (PER-032) was issued on 12/18/2007 to assess the effect of changes made in revisions up to that date. Since that time, sections 3 through 6 of the TBD were revised on several occasions with the last revision taking place on 11/26/2012. At the time PER-032 was issued, NIOSH requested the return of any claim with an increase in dose regardless of whether that increase would now result in a probability of causation (POC) greater than 50%. Therefore, changes made up to that point have been accounted for and do not need to be considered in this PER. This PER considers the changes that were made between the current version and the versions in effect at the time of PER-032.

2.0 Issue Evaluation

The revisions to the NTS TBD included several changes that would cause an increase in calculated doses. Revision 2 of the medical x-ray section (Section 3) was issued on 11/26/2012. This revision included dose estimates for lumbar spine x-rays that were not previously included in the TBD. The values came directly from ORAUT-OTIB-0006 revision 4 (the current revision). Revision 4 to ORAUT-OTIB-0006 increased the values for some organs. The revision to OTIB-0006 was the subject of DCAS-PER-0041 but NTS claims were not evaluated under that PER because that change was to be considered in this PER. The NTS TBD includes lumbar spine x-rays only for 1960 through 1985. Therefore, this change would cause an increase in dose assigned from a lumbar spine x-

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ray between 1960 and 1985 for the liver, gall bladder, spleen, pancreas, stomach, bone surfaces, remainder and uterus.

The revision to section 3 of the NTS TBD also increased dose to some organs for PA chest x-rays between 1960 and 1966. The organs affected are thyroid, ovaries, bladder, colon, testes and uterus.

The NTS TBD environmental section (Section 4) was revised several times since the last NTS PER. Increases in the assigned dose result from the following changes:

- Correction factors were added to account for the inhalation of short lived fission products (Table 4-7 and Attachment B of revision 3).
- Radon intake estimates from the G tunnel and for unknown tunnels increased prior to 1984 (Table 4-21 of revision 3).
- Extended the annual ambient external dose estimates through 2010. This is technically not an increase since no estimate existed previously and would only affect those cases with a cancer diagnosis after 2001. However, there is a potential that some cases could be affected so the criteria is included.

The NTS TBD internal dose section (Section 5) was last revised on 8/17/2012. Increases in assigned dose from revisions to Section 5 include a change to the isotopic ratios leading to an increase in assigned intakes from Pu-238 and Am-241 when the intake is based on Pu-239 bioassay analysis.

Also, the designation of an SEC on 4/5/2010 resulted in an interpretation that intakes could no longer be assigned from 1963 to 1992. In December 2011, that interpretation was corrected to allow the assignment of environmental intakes. Therefore, cases completed between 4/5/2010 and December 2011 could be affected.

The NTS TBD external section (Section 6) was last revised on 11/9/2012. There are no increases in dose assignments since the last NTS PER was issued, however, at one point, there was a misinterpretation of beta to photon ratio to be assigned prior to 1966. Therefore, the beta dose assigned based on photon dosimeters prior to 1966 was also considered in this PER.

3.0 Plan for Resolution or Corrective Action

A search of the claims tracking database as well as a text search of all dose reconstructions was conducted to build a list of claims with any mention of the NTS. This search identified 2316 claims.

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From that list, those identified as having a Probability of Causation (POC) greater than 50% were removed as well as those identified as meeting the conditions for compensation under the SEC. This left 1972 claims.

At that point, the most recent version of a dose reconstruction for each claim was reviewed manually to determine if any of the changes to the TBDs affected the particular claim. This step removed 1361 claims from further evaluation leaving 611 claims. Dose for the 611 claims was to be recalculated using the current TBD and any other applicable procedures. During this step, 15 of the claims were returned to NIOSH for a new Dose Reconstruction for other reasons. Also, 2 claims were found to be pulled from dose reconstruction by DOL and 4 of the claims were found to actually have a POC greater than 50%. These 21 claims were removed from further evaluation.

Doses for the remaining 590 claims were recalculated using the current revisions of the TBD as well as any other applicable documents. The resulting POC for 576 of the claims was below 45%. Eight of the claims resulted in a POC greater than 50%. The remaining six claims had a POC between 45% and 50%. For those claims, IREP was run 30 times at 10,000 iterations per NIOSH procedures. The resulting POC was still less than 50% for the each of the six 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 six of the claims that would now result in a POC greater than 50%. The other two claims that would now be greater than 50% have already been returned to NIOSH by the Department of Labor.