

**SC&A'S EVALUATION OF REVISIONS TO PANTEX TECHNICAL BASIS DOCUMENTS RELEVANT TO SITE PROFILE AND SEC ISSUES:  
TECHNCIAL BASIS DOCUMENTS ISSUES MATRIX**

TBD Number	SC&A Number	OTIB Issue	NIOSH Response	SC&A Response
6-1	1	<p><b>Site Profile Issue # 1</b>  <b>Interpretation of external dosimetry data.</b> SC&amp;A could not find that NIOSH addressed the issue of recorded zeros (or other markings) in the records before 1989 in the revised ORAUT-TKBS-0013-6 (Revision 02). From reviewing OTIB-0086 (ORAUT 2015), SC&amp;A recommends that the DR consider the worker's job titles and dosimetry records in totality when evaluating recorded zeros (as well as blanks, dashes, and hash marks) for deciding whether to assign coworker, missed, or environmental external dose, because the electronic database may have inserted zeros for unmonitored workers after 1976.</p>	<p>Based on NIOSH's research, beginning in 1988 all personnel entering the controlled radiation areas were required to wear a personnel dosimeter. This was addressed with the publication of OTIB-0086 which specifies:</p> <p>In such cases for years before 1988, NIOSH intends to apply (after consideration of the worker's job title and the totality of the monitoring record), either: 1) Unmonitored dose based on external coworker data listed in OTIB-0086 and Tables A-1 through A-3 of the Pantex External TBD, 2) Missed dose, or 3) Ambient dose.</p> <p>For 1988 and later years, all personnel who entered the operational areas of the plant were required to wear a dosimeter as a condition for entry. The absence of a listed result, or the presence of a dash, slash, or hash mark for a given dosimeter exchange cycle in 1988 and later years, should be interpreted to mean that the worker was not monitored because he or she was not present in the operational areas. Therefore, ambient dose should be assigned for those exchange cycles.</p>	<p>5/2016  SC&amp;A found that NIOSH's response addressed the issue, except for:</p> <p>a) The fact the word "zero" was not specifically used when considering the worker's monitoring records. This is important because the electronic database may have inserted zeros for unmonitored workers after 1976.</p> <p>b) TBD-6, page 13 states that the year when all personnel entering a rad area were monitored was 1989. Which year, 1988 or 1989, is correct?</p>

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6-2	2	<p><b>2.0 Data do not support assumption that 95th percentile neutron-to-photon ratio is bounding for all exposure scenarios.</b> From reviewing the revised ORAUT-TKBS0013-6 (Revision 02) and the related document, OTIB-0086 (ORAUT 2015), SC&amp;A found that instead of using the n/p method, NIOSH recommends using the recorded neutron dose, with the NTA film results adjusted for energy response, angular response, and track fading. As previously summarized, and detailed in SC&amp;A's review of OTIB-0086 (SC&amp;A 2015), SC&amp;A does not find the neutron adjustment factors to be claimant favorable for Pantex workers.</p>	<p>NIOSH notes that the comments on the site profile document were similar in nature to those made during SC&amp;A's review of OTIB-0086 (ORAUT 2015). NIOSH recently determined that the Pantex Plant ended its contract with Landauer for NTA film at the end of 1973, and likely transitioned to TLDs in 1974 for neutron monitoring. As a consequence of this recent determination, NIOSH intends to revise OTIB-0086 and ORAUT-TKBS-0013-6 (Revision 02) to reflect the use of NTA film through 1973 and the use of TLDs for 1974 and subsequent years. NIOSH contends that the correction factors applied to the NTA film results to account for energy response, angular response, and track fading are favorable to claimants and are applicable through 1973.</p>	<p>5/2016 SC&amp;A will need to review the revised OTIB-0086 and TBD-6 to evaluate the changes made for the transition from NTA film to TLDs.</p> <p>However, the NTA film correction factors recommended by NIOSH has not been justified and the issues raised by SC&amp;A are still applicable.</p>
5-6	3	<p><b>Site Profile Issue #3</b> <b>Completeness and interpretation of historic radiological exposure sources.</b> SC&amp;A found that sections had been added to ORAUT-TKBS-0013-5, Revision 04 (2015), and ORAUTTKBS-0013-6, Revision 02 (2015), with information concerning Pantex's history and workers at other AEC/DOE facilities that resolves this issue.</p>	<p>No response necessary. SC&amp;A deems the issue resolved.</p>	<p>5/2016 SC&amp;A recommends closure.</p>

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5-4	4	<p><b>Site Profile Issue #4 (SEC Issue #15): Exposure from tritium.</b> SC&amp;A found that Revision 04 to ORAUT-TKBS0013-5 (mainly Table 5-3) provides for tritium dose assignments based on recorded MDA values and also simplifies tritium dose assignment for the DR and allows for consistence in dose assignments. SC&amp;A found this issue to be addressed, except for the statement in the footnote to Table 53 of ORAUT-TKBS-0013-5, Revision 04 (2015), concerning the maximum intake and dose, and the reason for using the period 1956–1990 instead of 1956–1991.</p>	<p>Although the sentence “Note that these values exceed any recorded doses or intakes the site reported for any year of operation, including 1989 when a major tritium released occurred.” is misleading, the listed maximum and mode annual intakes are greater than those listed in the ORAUT-TKBS0013-5, Revision 01 (2007). The footnote in the next revision of ORAUTTKBS-0013-5 will be revised to read “Note that these values exceed any recorded intakes the site reported for any year of operation, including 1989 when a major tritium released occurred.”</p> <p>All doses reflected in Table 5-3 of ORAUT-TKBS-0013-5, Revision 04 (2015) are based on the current ICRP Publication 68 tritium dose coefficients. Moreover, the ORAUT-TKBS-0013-5, Revision 04 (2015) Table 5-3 missed and/or unmonitored doses are only applied for those claimants with recorded zero results or reasonable expectation that they should have been monitored and were not. In cases where workers have recorded doses in excess of “zero” TEDE, then the dose reconstructor will assign tritium dose in accordance with the instructions listed in Attachment C, ORAUT-TKBS-0013-5, Revision 04 (2015).</p> <p>The rationale for assigning doses through 1990 based on an MDA of 0.500 uCi/L is based on a review of claimant records which showed that value to be the highest through 1990. For 1991 and all subsequent years, the highest listed MDA in claimant records listed was 0.135 uCi/L. The SEC dates were not considered for the time periods listed in Table 5-3.</p>	<p>5/2016 SC&amp;A agrees that the changing in wording would clarify the maximum 1989 dose and intake issue.</p> <p>SC&amp;A accepts the rationale for using the period of 1956–1990, instead of 1991.</p> <p>This issue can be closed after the revision is made in the wording for the maximum intake.</p>