General Steel Industries (GSI)  
Special Exposure Cohort

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Knoxville, TN
GSI Uranium Airborne

- Performed radiography examinations of uranium metal using betatrons
- No correction of defects or other manipulation of uranium metal was reported
- Potential airborne from uranium corrosion products
- Used surrogate data to define airborne
GSI Airborne Estimate

- Originally estimated using surrogate data from TBD-6000
- This data was not considered representative of GSI
- Work Group suggested NIOSH search for more appropriate data, the Board agreed
- Data was to be representative of handling cold uranium metal
Additional Data

- Search resulted in adding data to the sparse data previously collected
- Data set contained 37 air samples
- Form of uranium consisted of
  - Slugs
  - Derbies
  - Billets
  - Dingots
- Analysis of the data indicated airborne values were independent of size and shape
Sanford Cohen & Associates (SC&A) Review

- SC&A reviewed the data and suggested several additions, deletions and adjustments
- NIOSH, SC&A and the Work Group agreed with a final data set including most but not all of SC&A suggestions

<table>
<thead>
<tr>
<th></th>
<th>NIOSH</th>
<th>SC&amp;A</th>
<th>Final</th>
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</thead>
<tbody>
<tr>
<td>Geometric mean</td>
<td>21.3 (dpm/m³)</td>
<td>12.7 (dpm/m³)</td>
<td>17.5 (dpm/m³)</td>
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<tr>
<td>Geometric Standard Deviation</td>
<td>2.62</td>
<td>2.74</td>
<td>2.29</td>
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<tr>
<td>95th Percentile</td>
<td>103.7 (dpm/m³)</td>
<td>66.4 (dpm/m³)</td>
<td>68.7 (dpm/m³)</td>
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Surrogate Data Criteria

- NIOSH evaluated the data set against the Boards Surrogate Data criteria and determined the criteria was met
- SC&A reviewed the data against the criteria and agreed
- During the Work Group meeting on 11/28/2012, the Work Group agreed