WYOMING INDUSTRIAL RADIOGRAPHY INCIDENT

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MATERIALS INSPECTION BRANCH
NRC REGION III

August 22, 2019
Radiography Setup
Exposure Estimate

Licensee Assumptions

Cranked out in front of work bench
Hand 8 inches from source, whole body 12 inches from source
Uncollimated!

Licensee Calculations

3732 mrem whole-body
8398 rem extremity

Accumulated Dose through August: 1164 mrem

Estimated Total Dose: 4896 mrem
NRC Exposure Estimate
NRC Exposure Estimate

\[ \omega = \frac{0.38}{0.50} \]

60°

8”

36”
# NRC Exposure Estimate

<table>
<thead>
<tr>
<th>Phase</th>
<th>Time (seconds)</th>
<th>Whole-Body (millirem)</th>
<th>Extremity (millirem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Crank Out</td>
<td>5</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td>2. Walk Over</td>
<td>2</td>
<td>0.91</td>
<td>0.91</td>
</tr>
<tr>
<td>3. First Radiograph</td>
<td>8</td>
<td>18.13</td>
<td>2036.01</td>
</tr>
<tr>
<td>4. Swap Film</td>
<td>5</td>
<td>11.91</td>
<td>11.21</td>
</tr>
<tr>
<td>5. Second Radiograph</td>
<td>15</td>
<td>33.98</td>
<td>3817.51</td>
</tr>
<tr>
<td>6. Walk Back</td>
<td>2</td>
<td>0.91</td>
<td>0.91</td>
</tr>
<tr>
<td>7. Crank In</td>
<td>5</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>42</strong></td>
<td><strong>66</strong></td>
<td><strong>5867</strong></td>
</tr>
</tbody>
</table>
Enforcement Considerations

10 CFR 30.34(c)

Each person licensed by the Commission pursuant to the regulations in this part and parts 31 through 36 and 39 shall confine his possession and use of the byproduct material to the locations and purposes authorized in the license.
... Or is it?

10 CFR 34.41(a)

Whenever radiography is performed at a location other than a permanent radiographic installation, the radiographer must be accompanied by at least one other qualified radiographer or an individual who has at a minimum met the requirements of § 34.43(c).

10 CFR 34.3

Radiographic operations means all activities associated with the presence of radioactive sources in a radiographic exposure device during use of the device or transport (except when being transported by a common or contract transport), to include surveys to confirm the adequacy of boundaries, setting up equipment and any activity inside restricted area boundaries.
Enforcement Outcomes

Individual

One-year ban from performing radiography in NRC jurisdiction

THEN a two-year ban from supervising radiography in NRC jurisdiction

Licensee

Severity Level III Violation

No civil penalty
Food for Thought

What can we do as a National Materials Program to better communicate among each other, align on safety significant matters, and convey a unified message to the regulated community?
Because this happened too...
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