Status for the Risø Hot Cell Decommissioning

H. Carlsen

1. Background and site (H.E. and fuel, Co radio-therapy)
2. Removal of fertile material = no major hazards anymore
3. Removal of large contain. facilities / equipment
4. Decontamination of concrete cells
5. Decontamination of rooms
6. Collective dose
7. Collaboration
8. Remaining work
9. Conclusions

Shielded storage facility schematically.
Decontamination of concrete cells

<table>
<thead>
<tr>
<th>Cell number</th>
<th>Use</th>
<th>Initial irr. level</th>
<th>Status</th>
<th>[mSv/h]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reception</td>
<td>Medium</td>
<td>Remote cleaning</td>
<td>10 (hot spot 100)</td>
</tr>
<tr>
<td>2</td>
<td>Cutting, Co-work</td>
<td>High</td>
<td>Remote cleaning</td>
<td>20 (hot spot 4000)</td>
</tr>
<tr>
<td>3</td>
<td>Cutting, Co-work</td>
<td>High</td>
<td>Remote cleaning</td>
<td>20 (hot spot 400)</td>
</tr>
<tr>
<td>4</td>
<td>Repair work</td>
<td>Very low</td>
<td>Final cleaning</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Puncturing, Cer./Met.graphy</td>
<td>Low</td>
<td>Finished</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Cer./Met.graphy</td>
<td>Low</td>
<td>Finished</td>
<td>1</td>
</tr>
</tbody>
</table>

Main contaminants: $^{60}$Co, $^{134}$Cs, $^{137}$Cs, $^{152}$Eu, $^{154}$Eu and $\alpha$-nuclides

Severe hot spots
Location of smear tests

1: Shutter wall west
2: Shutter west
3: Shutter top
4: Shutter east
5: Shutter wall east
Contamination on shutters (smear tests)
Tests/shutter in order 3, 1, 2, 4, 5.
Collective doses

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1991</td>
<td>10-25</td>
<td>man-mSv/year</td>
</tr>
<tr>
<td>1991</td>
<td>43</td>
<td>-</td>
</tr>
<tr>
<td>1992</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>1993</td>
<td>?</td>
<td>-</td>
</tr>
</tbody>
</table>
Remaining work

- Cleaning of cells 1-4 to acceptable levels;
- Removal of cell ventilation and filters;
- Cleaning of room ventilation system;
- Cleaning of rooms;
- Removal of active drains.
Conclusion

- Time schedule OK;
  - niet geplande 'waste' (in waste facility die 'waste' job doen volgens)
- Remember all waste material from all sites in planning (when being the only facility for waste handling);
- Build new large equipment in small modules;
- Taking old equipment into extensive use may cause break-downs (in-cell crane/powermanipulator);
- Old site-people with veneration knowing site versus new people without veneration;
- Frogman enthusiasm!
- Project performed without high doses and without sophisticated equipment.