

## DeweyBurdPubEm Resource

**From:** Burrows, Ronald  
**Sent:** Monday, September 21, 2009 3:02 PM  
**To:** Burrows, Ronald  
**Subject:** HPS Ask the Expert Q8456  
**Attachments:** image001.png

The screenshot shows a Microsoft Internet Explorer browser window. The title bar reads "RG 1.86 limits - Microsoft Internet Explorer provided by USNRC". The address bar shows the URL "http://hps.org/publicinformation/ate/q8456.html". The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The toolbar contains icons for Back, Forward, Stop, Refresh, Home, Search, Favorites, and other utility icons. The main content area displays a webpage with a navigation menu on the left and a main content area on the right. The navigation menu includes links for Home, Who We Are, Join the HPS, News & Events, Meetings, Public and Media, Publications, Position Statements, Fact Sheets, College Students, Employers, Physicians, Links, Members Login, Contact Us, Site Map, and Search. The main content area features a header with navigation links: Home, Affiliates, Ask the Experts, Radiation Terms, Employment, and Meetings. Below the header, the page title is "Answer to Question #8456 Submitted to 'Ask the Experts'". The category is "Decommissioning – Release Criteria and Guidelines". The text states: "The following question was answered by an expert in the appropriate field". A question is posed: "Regarding Regulatory Guide 1.86, do you have a referenced definition for the uranium group in Table 1?". An answer follows: "Thank you for your question pertaining to Regulatory Guide (RG) 1 Nuclear Reactors." Table 1 of RG 1.86 lists acceptable surface contamination radionuclides. The first radionuclide grouping is listed as "U-nat, U-238, uranium-235, and uranium-234 at relative natural activity ratios consistent with the short half-life progeny of uranium-238, i.e., thorium-234, protactinium-234m, and uranium-234 in equilibrium with the uranium-238." The answer continues: "Your specific question referred to a referenced definition for the phrase 'U-nat, U-238, uranium-235, and uranium-234' in Table 1 of the RG. The best I was able to find was a letter dated 1971 (ORISE) to Mr. David Fauver (NRC) with subject line 'Interpretation of Surface Contamination Limits for Uranium-238, Uranium-235, and Uranium-234'. I could not find this material published in any NRC documents." The answer concludes with "Hope this helps." and the signature "Eric W. Abelquist, CHP". The Windows taskbar at the bottom shows the Start button and several open applications: FC 83-23, September, ADAMS Find, NT DSER se..., Document1, LC DSER sec..., and a text document.

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Management Programs  
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301.415.6443

**Hearing Identifier:** Powertech\_Uranium\_Dewey\_Burdock\_LA\_Public  
**Email Number:** 108

**Mail Envelope Properties** (44CD2E65B0FF0E499CB32BC30CF781F009472B)

**Subject:** HPS Ask the Expert Q8456  
**Sent Date:** 9/21/2009 3:02:11 PM  
**Received Date:** 9/21/2009 3:02:12 PM  
**From:** Burrows, Ronald

**Created By:** Ronald.Burrows@nrc.gov

**Recipients:**  
"Burrows, Ronald" <Ronald.Burrows@nrc.gov>  
Tracking Status: None

**Post Office:** HQCLSTR01.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	206	9/21/2009 3:02:12 PM
image001.png	218227	

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** Yes  
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**Recipients Received:**

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## Answer to Question #8456 Submitted to "Ask the Experts"

**Category:** [Decommissioning — Release Criteria and Guidelines](#)

The following question was answered by an expert in the appropriate field:

**Q** Regarding Regulatory Guide 1.86, do you have a referenced definition for the phrase "associated decay products" for the uranium group in Table 1?

**A** Thank you for your question pertaining to Regulatory Guide (RG) 1.86, "Termination of Operating Licenses for Nuclear Reactors." Table 1 of RG 1.86 lists acceptable surface contamination levels for four groupings of radionuclides. The first radionuclide grouping is listed as "U-nat, U-235, U-238, and associated decay products." This grouping refers to processed uranium, i.e., uranium that has been separated from its longer half-life decay products by extraction of the uranium from the naturally occurring ore state. So U-nat is composed of uranium-238, uranium-235, and uranium-234 at relative natural activity ratios of roughly 1.0/0.05/1.0, and contains the short half-life progeny of uranium-238, i.e., thorium-234, protactinium-234, and protactinium-234m, in secular equilibrium with the uranium-238.

Your specific question referred to a referenced definition for the phrase "associated decay products" for the uranium group in Table 1 of the RG. The best I was able to find was a letter dated 26 May 1994 from Mr. James D. Berger (ORISE) to Mr. David Fauver (NRC) with subject line "Interpretation of Surface Contamination Guidelines - Draft 5." I could not find this material published in any NRC documents.

Hope this helps.

Eric W. Abelquist, CHP

**What's New?**

- EPA's STAR Graduate and GRO Undergraduate Fellowship Funding Now Accepting Applications
- October Journal
- October Newsletter

**Upcoming Events**

- 2010 IHP Midyear Topical Meeting Radiation Risk Communication to the Public 24-27 January 2010 Albuquerque, NM
- 2010 HPS Professional Development School Radiation Risk Communication: Issues and Solutions 27-29 January 2010 Albuquerque, NM

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