Docket: 030-01179
License: 50-02430-07

Evans, Robert

Control: 47189

From: Tracey Martinson [tamartinson@alaska.edu]
Sent: Monday, June 28, 2010 3:16 PM
To: Evans, Robert
Subject: Re: Question about radioactive material use on Alpha Helix

Rob,

Sorry for the delay in responding to your email. I was out of the office last Thursday and Friday, visiting our Lena Point Facility in Juneau.

I checked with the former RSO (and Alpha Helix user), Dr. Susan Henrichs, regarding the use of isotopes other than carbon-14 and tritium on board the Alpha Helix. She said the sodium-22, chlorine-36, calcium-45, manganese-54, and iron-59 were part of a proposed experiment that was never funded. Hence, they were never brought on board and used. There was some use of sulfur-35 and iodine-125, but she thought that might have been pre-1990. Looking over the wipe test records from 1990-2004 (the last time isotopes were used on board), I see only carbon-14 and tritium listed on the wipe test logs. The final wipe test was counted on the 0-670 channel.

Gas chromatographs containing nickel-63 foils (in electron capture devices) were occasionally brought on board by researchers, used during a research cruise, and then taken off the ship at the end of the cruise. They were never stored on board on a permanent basis.

Sincerely,
Tracey Martinson

On Fri, Jun 25, 2010 at 7:58 AM, Evans, Robert <Robert.Evans@nrc.gov> wrote:

Tracey-

During the review of your request to remove the R/V Alpha Helix from the license, we noted that the July 31, 2008, request does not mention all of the radionuclides that were previously approved for use on the vessel.

The original application for the alpha helix stated that the most commonly used tracer was supposed to have been carbon-14 bicarbonate. Other potential tracer materials mentioned in the application included hydrogen-3 (tritium), sodium-22, phosphorus-32, sulfur-35, chlorine-36, calcium-45, manganese-54, iron-59, and iodine-125. The application also described the planned use of a gas chromatograph containing nickel-63.

However, the letter dated July 31, 2008, only mentions carbon-14 and hydrogen-3. We were wondering if any other longer lived radionuclides were ever used on the vessel, such as sodium-22, and whatever happened to the gas chromatograph(s) on the vessel? Also, would the final swipe test for the vessel have identified the presence of these other radionuclides, if they had been present?

Thanks.

Rob Evans

Sr. Health Physicist

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