(4)

Cool, Donald

From: Bill Dean NSIR
Sent: Tuesday, January 15, 2008 2:57 PM
To: Eric Leeds; John Grobe; Gary Holahan; Michael Johnson; George Pangburn
Cc: Cyndi Jones; Farouk Eltawila; Donald Cool; Jim Dyer; Vincent Holahan; Sami Sherbini; Roger Pedersen; James Wiggins
Subject: Re: Individual Risk Focussed Approach

NSIR

In my mind, the reasons why many of our experts gravitated to having both LNT and a more realistic truncation value apply hear. I would only include LNT as a point of comparison to a more realistic approach.

I took a short poll of my family and they were more amenable to the risk discussion than LCF as long as we appropriately describe what the risk is being compared to in layman's terms.
Bill Dean, Deputy Director, NSIR
-----Original Message-----
From: John Grobe
To: Leeds, Eric <EJL@nrc.gov>
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Cc: Jones, Cyndi <CGJ@nrc.gov>
Cc: Eltawila, Farouk <FXE@nrc.gov>
Cc: Cool, Donald <DAC@nrc.gov>
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NRR

Sent: 1/15/2008 1:15:54 PM
Subject: Individual Risk Focussed Approach

Ladies and Gents,

I have been pondering the "average individual risk" approach we discussed near the end of the meeeting. I also am very appreciative of Farouk's caution that we make sure we take the time to study, think and articulate the pros and cons of theis new approach. Too often, we come up with a whole new idea dn it sounds great until you take the time to let the staff run it to ground and give us their views. All in all, I think it has merit, but I have one thought for you to consider...

When we were thinking in the context of total latent cancer fatalities (LCF) among a population, we get a lot of "help" from various societies letting us know that accumulating dose and projecting health effects from small individual doses over very large populations is problemmatic. We solicited our talented experts and got their thoughts on this subject.

This new approach is very different. If you are looking at individual risk, and not accumulating dose and projecting population health effects .... I don't think we have advice from our friends (ICRP, NCRP, etc.) that using LNT for this type of analysis is inappropriate. In other words, I believe that the professionals within the NRC and outside the NRC would broadly support using LNT without any threshold or modification fro considering individual risk. I discussed this briefly with Vince and I believe he agreed. The problems come from projecting that individual risk onto large populations ... then we get into the same conundrum we debated for 2 hours yesterday.

T/68

I believe that it would be inappropriate to use a threshold in the risk calculation. I would recommend that we use only LNT for three population groups: the "average person" within the area from zero to one hundred miles, from the subpopulation of zero to fifty miles, and from the subpopulation zero to ten miles, and articulate the results in terms of the likelihood of that "average person" dying from cancer over some period of time resulting from the very unlikely event of a severe reactor accident. Simply the fact that we are anlyzing only to 100 miles reduces the size of our discomfort with the analysis.

Some will try to apply the results to a population (e.g., 10E-05 likelihood times 100E06 people equals 1000 deaths) and we need to be prepared to explain the weaknesses in that approach and bring the dialogue back to risk.

Overall, I think that this approach could be very powerful from a public communications perspective .... and it minimizes the challenges we face with comparability between this study and the 1982 study. Thanks for seeding these clouds of new thought Gary (wasn't that poetic!!).

Jack