

HLWYM HEmails

From: Budhi Sagar
Sent: Tuesday, July 11, 2006 12:45 PM
To: Christopher Ryder
Subject: RE: Question

Chris,

I used a Poisson distribution with $\lambda = (3/54,000) \times \text{no of lifts per year}$. As an example, I used 500 lifts per year (any other number can be assumed in the example, the DOE shall use the design value). Once I have λ , Poisson gives me the probability of n drops in t time. We can also calculate the mean (and variance) of drops in say 50 or 100 years. If you put $n = 0$ and $t = 100$ years, you calculate the probability of zero drops in 100 years (it is close to zero). Subtracted from 1 is the probability of one or more drops in 100 years, which is close to 1, indicating the crane drop to be a Cat 1 event.

I did not consider the uncertainty in λ , but one could do that.

I am unclear about the table you used to get the confidence limits; I would like to see it if possible. Confidence bounds on the mean of a Poisson are not commonly discussed in statistics texts. In theory we can get confidence bounds on the mean of any distribution by using Chebyshev inequality which is not precise but good enough. In principal, the confidence limits on the mean are an inverse function of the square root of the number of data points (i.e., trials or experiments) which in this case is 54,000.

As I understand it now we may not talk about these confidence bounds in the ISG anyway. If that is the case, then the above may be moot although I would still like to understand the table you followed.

Budhi

-----Original Message-----

From: Christopher Ryder [mailto:CPR@nrc.gov]
Sent: Tuesday, July 11, 2006 10:36 AM
To: bsagar@cnwra.swri.edu
Subject: Question

Yesterday, you said that to get the probability of the crane dropping a load, you used the exponential distribution.

Please briefly describe what you did.

Thanks.

Chris Ryder

Christopher Ryder
(301) 415-6102
NMSS/HLWRS/SPAD/PAS
High Level Waste Repository Safety
Site Performance Assessment Directorate

Mail Stop T 7 F23
Room T 7K2
Tel: (301) 415-6102
Fax: (301) 415-5397

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 78

Mail Envelope Properties (bsagar@cnwra.swri.edu20060711124440)

Subject: RE: Question
Sent Date: 7/11/2006 12:44:40 PM
Received Date: 7/11/2006 12:44:40 PM
From: Budhi Sagar

Created By: bsagar@cnwra.swri.edu

Recipients:
"Christopher Ryder" <Christopher.Ryder@nrc.gov>
Tracking Status: None

Post Office:

Files	Size	Date & Time
MESSAGE	2008	7/11/2006 12:44:40 PM

Options

Priority:	Standard
Return Notification:	No
Reply Requested:	No
Sensitivity:	Normal
Expiration Date:	
Recipients Received:	