Glenn:

Here is a verbal discussion of the numerics, using the Mean Column from Table A2c-2:

NO There is a $5.4x10^{-5}$ per year (1 in about 18,500) chance of something going wrong with one (1) crane operation (for our case: secure, lift, move and lower the cask; or secure, lift, raise, move the cask - presumable after clearing the pool edge a drop while lower cask would not endanger the SFP).

The thing that can go wrong is one of the Fn's:

F1 -	Load hangup resulting from operator error	0.14
F2 -	Failure of component with a backup component	0.61
F3 -	Two-blocking event	0.05
F4 -	Failure of component without a backup	0.10
F5 -	Failure from improper rigging	0.21
	SUM	1.00

So for example, there would be *NO*F1* load hangups resulting from operator error ($7.4x10^{-6}$).

Depending on the *Fn* grouping, there may be one or more backup systems to prevent the actual drop of the load:

For example, *F1* has an overload device which has a failure rate of $4.0x10^{-3}$ per demand *(CF12)*

So bottom line for *CF1*, a load hangup combined with a failure of the overload device leading to a drop is *NO * F1 (CF11 in the table) * CF12* or $3.0x10^{-8}$ per year *(CF1)* of crane operation.

Add to this value the contribution from *CF2, CF3 and CF4* (crane failures, not rigging) to get the total for the crane *(CRANE)* of $1.4x10^{-6}$.

If there are 100 lifts, than 3 *(D1)* are assumed to be drops, for the crane contribution ***CF*** of $4.4x10^{-6}$ per year for the 100 lifts *(CRANE * D1)*.

The rigging contribution comes from the WIPP study and has a mean value of $8.7x10^{-7}$ per year, with 6 of 100 lifts leading to a drop ($5.3x10^{-6}$) ***(CR)***.

This leads to the bottom line ***CFCR*** value of $9.6x10^{-6}$ ***(CF + CR)***.

Do the path thing for ***LOI-S*** of 2.0x10-7 per year.

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