

Human Error and RCM

There are a couple of different ways to look at human error and the relationship with RCM. One way is to adopt the approach that it will not possibly generate a maintenance task and, as such, should not be included in the RCM analysis. However, responsible RCM practitioners all agree that human error does lead to failures in equipment and systems and that if it is not dealt with in your RCM analysis it must be addressed in some other way. This may take the form of Human Factors studies and possibly even ergonomics studies.

Let's be clear that these issues must be dealt with in some way. It is folly to simply ignore them or assume that mistakes never occur.

An RCM methodology that excludes human error induced failure modes is valid and in compliance with SAE JA-1011 and 1012 as long as it clearly states that these failure modes will be dealt with in some other and appropriate manner. Clearly there needs to be an organized follow up after the RCM analysis to ensure that this has in fact been fulfilled and the results implemented.

An attempt to make RCM more appealing by trimming time from the analysis using the exclusion of human error argument may well prove to be a false economy in the long term. The bottom line is, however, that failure modes that have occurred or are reasonably likely to occur must be addressed in some way.

Pros:

In theory the RCM analysis will be quicker because by excluding human error induced failures a significant proportion of failures will not need to be included.

Cons:

At least one separate effort has to be initiated within the organization to study human factors.

The bottom line here is that, one way or the other, all reasonably likely and known failure modes need to be addressed. It still amounts to the same amount of work and my advice is to encompass it all within the RCM effort rather than splitting and fragmenting projects. Either way will work although you may find yourself back-fitting the human error failures into the RCM analysis anyway.