DISCUSSION

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Rolf Sandström: I would like to complement you on your system which will be very useful. A brief comment. You pointed out that the model creep rupture curves show unphysical behaviour sometimes. In fact, one can easily demonstrate that if you represent the master curve with a non-linear polynomial which is the common approach it will **always** show unphysical behaviour if the time scale is sufficiently expanded.

Chris Bullough (author's response): You are quite correct in stating that the polynomial representation of the time-temperature-parameter master-curve will always show non-physical behaviour at some point on the time scale. However, our chief problem is that the polynomial sometimes exhibits non-physical behaviour only **slightly** outside of the range of data from which it was derived, and precisely at those stresses of interest for the assessment of component life.

Philip Sargent: How many different alloys do you have to keep records on - and evaluate data for - in your work on, say, boiler tubes?

Chris Bullough (author's response): The number of alloy types used for boiler tubes in any one plant is quite small, usually no more than five. However, during the lifetime of the plant, boiler tubing is often replaced, and therefore records must be kept regarding the background and use of both original and replacement tubing. In addition, particular tubes may be investigated, eg by post exposure tests, and these data must also be stored. In conclusion, although the number of **alloy types** may be fairly small, the number of apparently different **materials** may be much greater.

Clive Horton: Could you say more about the type of information needed, in a data base, on service degraded material?

Chris Bullough (author's response): A databank on service degraded material would aid the comparison of data obtained during an assessment, with the data obtained from similar components. Often this is desirable in circumstances where the records pertaining to a component are incomplete, or whenever only limited mechanical property data can be obtained from the component. The type of information required is, typically, stress-rupture and creep data for thin-section components, and creep-crack-growth and fatigue data for thick-section components. Ideally, metallographic information such as hardness and "A parameter" (cavity-density) measurements would also be stored. Such data are being used increasingly in the estimation of remanent life.