**Normal Distribution – Worked Example 2**

A company produces power circuits with a nominal output of 115[V]. Quality control records show that the actual output follows a normal distribution with mean 115[V] and standard deviation 0.8[V].

The company has been approached by a Japanese company interested in purchasing large volumes of these units for their European subsidiary.

Their purchasing policy requires that before taking on a new supplier,

the supplier must show that 99% of his production lies within 2[V] of the nominal output. Can the company meet these standards?

**Solutions :**

We are told that the quality level for the customer is required to be 99%. Hence the non-conformance rate for the customer is capped at 1%, and the customer limits are between 113 and 117 volts.

Therefore looking at the below graph, we want the shaded area in blue to be less than 1.



