an analysis of domain line broadening for single crystal x-ray
diffraction carried out by Evenson and Barnett.[21] Although
the resultant fit reproduced the observed line shapes fairly well
it could not account for the displacement of observed peak positions
discussed above. This fit also could not account for the observed
intensity for the diffraction line with rhombohedral indexing (221).
This discrepancy was pointed out for the monoclinic analysis
since the monoclinic pair (401), (312) corresponds to the rhombohedral
(221) line in the undistorted cell. The goodness of fit ratio
for this analysis (5.3) was significantly worse than the cor-
responding ratio for the monoclinic analysis (3.7).

V.   DISCUSSION AND CONCLUSION

The KCN III phase seems to be understood reasonably well.
The crystal structure is cubic with the space group $Pm3m(O_h^1)$.
The diffraction peak intensities are well represented assuming
a disordered crystal with the CN^- ion randomly distributed over
the 8 diagonal configurations. The temperature factors are
unusually large indicating a high probability of the CN^- ion
jumping between equilibrium positions. The large motional
amplitude for the K^+ ions may be caused by local dilatations
accompanying the rotational motions of the CN^- ion. This
dynamical picture is very similar to that proposed for KCN I.[4]

The KCN IV phase is more difficult to definitively interpret.
There is some displacement of the (100) and (200) peaks from their
exact rhombohedral positions ($\sim$ .014 Å and .007 Å, respectively)
which, although small, is well outside the accuracy of the