On a class of generalized solutions to equations

describing incompressible viscous fluids

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We consider a class of viscous fluids with a general monotone dependence of the viscous stress on the symmetric velocity gradient. We introduce the concept of *dissipative solution* to the associated initial boundary value problem inspired by the measure–valued solutions for the inviscid (Euler) system. We show the existence as well as the weak–strong uniqueness property in the class of dissipative solutions. Finally, the dissipative solution enjoying certain extra regularity coincides with a strong solution of the same problem.