ions is statistically distributed across a center of inversion at 001/2. Some bond parameters are: Ni-S = 2.130(7), C-N = 1.319(7), C = 1.672(7), C = 1.594(7), C = 1.367(7), C = 1.305-1.317(8), C = 1.402-1.409(8). The Ni(H,NHSSCH3)22+ cation in this complex retains the pseudooctahedral NS coordination geometry. The difference between the complexes II and III exists in the geometry, the Ni-S=O bond parameters reported for the octahedral complexes are: Ni-S = 2.200-2.230, Ni-N = 2.132-2.135, Ni-N = 2.132-2.135, C-N = 1.305-1.317, C = 1.402-1.409. Some bond angles are: Ni-S=O~10°10(2°), Ni-N= 9.660(4), #= 101°10(2), Ni-N= 1.650-1.667, C-N= 1.305-1.317, Ni-N= 2.370-2.393, Ni-N= 2.370-2.393, C-N= 1.650-1.667. The complex II has almost the same structure as the complex I, but in the complex III, the Ni-S=O bond lengths are: Ni-S = 2.386(2), Ni-N = 2.130(7), C-N = 1.319(7), C = 1.672(7), C = 1.594(7), C = 1.367(7), C = 1.305-1.317(8), C = 1.402-1.409(8). The structure reported of octahedral complexes with bipyridine is 2,2'-bipyridine, these distortions are readily analyzed and contrasted by use of the bond and twist coordinates developed for the discussion of non-planar peptide linkages. The two title cations represent the second and third structures reported of octahedral complexes with bipyridine groups and these, along with four square-planar di-bpy complexes, allow generalizations on the modes of accommodating the steric strain. Three of the complex ions have bpy units which are in a twist configuration, in contrast to the complex Ru(bpy)2(μ-OH)2 which has a twist conformation.