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^{1}H NMR study on X-ray irradiated κ-(BEDT-TTF)$_2$Cu[N(CN)$_2$]Br KAZUYA MIYAGAWA, University of Tokyo, TAKAHIKO SASAKI, Tohoku University, NAOKI YONEYAMA, Yamanashi University, NORIO KOBAYASHI, Tohoku University, KAZUSHI KANODA, University of Tokyo — The κ-(BEDT-TTF)$_2$Cu[N(CN)$_2$]Br (κ-Br) is a quasi-two dimensional superconductor with T_c of 12 K. By substituting Cl for Br in the insulating layer, the system becomes a Mott insulator, k-(BEDT-TTF)$_2$Cu[N(CN)$_2$]Cl (κ-Cl), with the Neel temperature of 25 K. So, κ-Br salt is situated close to the Mott transition. Recently, Sasaki *et al.,* have reported the transformation from a metallic (superconducting) state to an insulating state by the x-ray irradiation. The 500h-irradiated thin sample shows insulating behavior in the temperature dependence of resisitivity. We report the ^{1}H NMR studies on the 500h-irradiated κ-Br salt. Below 150 K, where the nuclear relaxation is dominated by electron spins, $1/T_1$ of the irradiated sample increases from that of the non-irradiated sample and is even larger than the value of κ-Cl. Nevertheless, there is no manifestation of magnetic ordering; that is, neither a line broadening nor a divergent peak in $1/T_1$ down to 1.5 K. We will discuss the electronic state of irradiated k-Br salt based on experimental results.

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