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Lisa Carbone, Hill Center-Busch Campus, Rutgers, The State University of New Jersey, 110 Frelinghuysen Rd, Piscataway, NJ 08854-8019, **Elizabeth Jurisich**, 66 George Street, Charleston, SC 29424, and **Scott H. Murray*** (scotthmurray@gmail.com), 3359 Mississauga Road, Mississauga, ON L5L 1C6, Canada. *A complete pro-nilpotent group for the monster Lie algebra*. Preliminary report.

Let \mathfrak{g} be a Borcherds algebra (for example, the monster Lie algebra \mathfrak{m}). We construct a complete pro-nilpotent group $\widehat{\mathcal{U}}$ of automorphisms of a completion $\widehat{\mathfrak{g}}$ of $\mathfrak{g} = \mathfrak{n}^- \oplus \mathfrak{h} \oplus \mathfrak{n}^+$ obtained by replacing $\mathfrak{n}^+ = \bigoplus_{\alpha \in \Delta^+} \mathfrak{m}_\alpha$ with $\widehat{\mathfrak{n}}^+ = \prod_{\alpha \in \Delta^+} \mathfrak{m}_\alpha$. The elements of $\widehat{\mathcal{U}}$ have infinite order and act on $\widehat{\mathfrak{g}}$ by shifting root spaces with respect to a \mathbb{Z} -grading. We may identify $\widehat{\mathcal{U}}$ with a group of non-commuting formal power series with constant term equal to 1 and we determine that $\text{Inn}(\mathfrak{m}) \cong \text{PGL}_2(\mathbb{C})$. (Received August 20, 2019)