Excitation energies, radiative and autoionization rates, dielectronic satellite lines, and dielectronic recombination rates for excited states of Yb-like W\textsuperscript{1} P. BEIERSDORFER, Lawrence Livermore National Laboratory, U.I. SAFRONOVA, A.S. SAFRONOVA, University of Nevada, Reno — Energy levels, radiative transition probabilities, and autoionization rates for [Cd]4f\textsuperscript{14}5p\textsuperscript{6}6l''nl, [Cd]4f\textsuperscript{14}5p\textsuperscript{6}6l''nl, [Cd]4f\textsuperscript{14}5p\textsuperscript{5}5d\textsuperscript{2}nl, [Cd]4f\textsuperscript{14}5p\textsuperscript{5}5d\textsuperscript{2}nl, and [Cd]4f\textsuperscript{13}5p\textsuperscript{5}5d\textsuperscript{2}nl (l'' = s, p, d, f, g, n = 5 – 7) states of Yb-like tungsten (W\textsuperscript{4+}) are calculated using the RMBPT, HULLAC, and COWAN codes. Branching ratios relative to the [Cd]4f\textsuperscript{14}5p\textsuperscript{6}6s, [Cd]4f\textsuperscript{14}5p\textsuperscript{6}6s, and [Cd]4f\textsuperscript{14}5p\textsuperscript{6}6s thresholds in Tm-like tungsten and intensity factors are calculated for satellite lines, and dielectronic recombination (DR) rate coefficients are determined for the singly excited, as well as non-autoionizing core-excited states in Yb-like tungsten. Contributions from the autoionizing doubly excited states and core-excited states (with n up to 100), which are particularly important for calculating total DR rates, are estimated. Synthetic dielectronic satellite spectra from Yb-like W are simulated in a broad spectral range from 200 to 1400 Å. These calculations provide recommended values critically evaluated for their accuracy for a number of W\textsuperscript{4+} properties useful for a variety of applications including for fusion applications.

\textsuperscript{1}This research was sponsored by DOE under the OFES grant DE-FG02-08ER54951 and in part under the NNSA CA DE-FC52-06NA27588. Work at the LLNL was performed under auspices of the DOE under contract DE-AC5207NA2344.

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Date submitted: 25 Jan 2012