**EXECUTIVE SUMMARY: *Radiobiological shot noise explains Three Mile Island biodosimetry indicating nearly 1,000 mSv exposures***

The story conventionally told regarding the 1979 accident at the Three Mile Island nuclear power plant relies upon the authority of experts (known as health physicists) concerned with the health of persons who work with radioactive materials. This work explains that the conventional story is wrong because the health physics body of knowledge is incomplete in one fundamental respect. Correcting that single omission, it is shown that the true biological impact to those most exposed to radioactive releases from the damaged facility (measured as a reference dose) lies in the range at or above 1,000 mSv. The exposure is sufficient to explain acute effects observed at the time of the accident, including radiation sickness. This result for the reference dose is furthermore consistent with limited biological dosimetry conducted in 1994 in support of litigation ongoing at that time.