



July 5, 2016

Yun Xie, Ph.D.
Division of the National Toxicology Program
National Institute of Environmental Health Sciences
P.O. Box 12233, MD K2-03
111 TW Alexander Drive
Research Triangle Park, NC 27709

Re: 3M Comments Submitted Regarding the Draft National Toxicology Program Monograph on
“Systematic Review of Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid
(PFOA) or Perfluorooctane Sulfonate (PFOS).”

Dear Dr. Xie,

The 3M Company (3M) appreciates the opportunity to review and comment on the NTP’s draft monograph on the “Systematic Review of Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid (PFOA) or Perfluorooctane Sulfonate (PFOS)”. The NTP monograph summarizes in great detail the objectives, specific aims and methods used to conduct this systematic review. The NTP should be commended for its transparency of the methodology it used and thoroughness of their study.

Given the myriad of scientific literature that has become available, we offer the following comments, which reflect in the spirit of assisting with that effort. Our prepared comments have also been peer-reviewed by Dr. Norbert Kaminski (Director, Institute for Integrative Toxicology, Michigan State University). There are several areas of the NTP systematic review on PFOA and PFOS in which insufficient animal data are used as supporting evidence for human findings and its final hazard conclusion. In particular, suppression of the TDAR in mice, which evaluates the “primary” IgM response, is used to support diminished antibody titers to vaccinations in humans. However, because vaccine antibody titers actually represent the secondary IgG response, the observation in human epidemiological data did not support the animal data because no suppression of the secondary IgG response was observed in mice. Similarly, there also are substantial inconsistencies between human and animal data to support the final hazard conclusions reached by the NTP in the areas of hypersensitivity for PFOA, infectious disease

resistance for PFOS, and and NK cell activity for PFOS. Collectively, for these reasons NTP should consider downgrading the final hazard conclusions.

In addition to the comments provided herein (peer-reviewed by Dr. Kaminski), we encourage NTP to consider the insightful independent evaluations and comments by Drs. August, Beck, Chang, and Osterholm. We sincerely hope that these scientific emphases will be taken into consideration by NTP with the final assessment.

Sincerely,

[Signature Redacted]

Carol A. Ley, MD, MPH
Vice President & Corporate Medical Director

[Signature Redacted]

Sue Chang, Ph.D.
Senior Toxicology Specialist