

## Protocol Amendment: Cancer Incidence in 3M Workers

The currently funded study will evaluate cancer incidence in 3M workers at the Cottage Grove and Saint Paul Plant facilities with specific reference to exposure to ammonium perfluorooctanoate (APFO). The cancer incidence data will be obtained from the Minnesota and Wisconsin cancer registries. Previous research identified a potential association with the risk of dying from prostate cancer in workers who held high APFO exposure jobs compared to those who held only low exposed jobs. A lingering question was the quality of the exposure model, in addition to the ascertainment of cancers.

There has been a substantial effort to improve the exposure model to APFO since the last mortality study. The University of Minnesota and 3M scientists have created a quantitative job exposure data matrix to estimate annual exposure intensities based on industrial hygiene data and expert judgment. This matrix and models for elimination of PFOA from the body will be a considerable improvement over the previous qualitative model.

With the improved model it will be important to re-analyze the mortality data as well as the cancer incidence data and include the Saint Paul Plant as a referent population. In doing so it will also be helpful to update the mortality analysis for the Cottage Grove facility and the Saint Paul Plant facility. The Cottage Grove facility was last updated in 2002, and the Saint Paul Plant has not been updated since 1997. An updated mortality linkage will also permit obtaining contributing causes of death which are only available for Cottage Grove 1997 for the years 1997-2002.

An amendment to the protocol is proposed to update the mortality analysis with this new exposure mode with follow-up through 2008. The work scope for this amendment will:

- Re-link the data to the Social Security Administration data file to verify vital status.
- Obtain underlying and contributing causes of death for all newly identified decedents.
- Obtain contributing causes of death for all persons previously identified as deceased.
- Re-code the currently held pre-1979 death certificates for contributing causes of death.
- Attempt to obtain death certificates for several presumed deceased cohort members who have not yet had a cause of death coded.
- Analyze the mortality data with the updated exposure model.

We anticipate identifying an additional 1,300- 1,400 deaths for the combined cohorts.

**Exhibit**

**1814**

State of Minnesota v. 3M Co.,  
Court File No. 27-CV-10-28862

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