Statement of

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House Committee on Interstate and Foreign Commerce

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Mr. Chairman and Members of the Subcommittee:

I am Dr. John F. Finklea, Director of the National Institute for Occupational Safety and Health (NIOSH). Accompanying me is Dr. Joseph K. Wagoner, Chief of the NIOSH Industrywide Studies Branch. We are pleased to appear before you today to present a progress report on our evaluation of possible occupational cancer at a DuPont plant in Belle, West Virginia.

Last May in preparation for and during this Subcommittee's investigation into environmental causes of cancer, NIOSH was informed of an unusually high number of employees with cancer at the DuPont plant in Belle. On May 25 we received a call from Mr. Earl G. McCune, Safety Chairman of the plant's Association of Chemical Employees, an independent union composed of 40 laboratory technicians. Mr. McCune informed us that he had personally assembled a list of 55 workers at the plant who were sick or had died from cancer and was particularly disturbed that of these, five were reported to have been eye cancer.

On May 28 at the request of the House Subcommittee on Oversight and Investigations, Dr. Joseph Wagoner appeared in Newark, New Jersey, at a hearing concerning Belle, West Virginia, and nitrosamines. At this hearing, Dr. Wagoner expressed his concern over the reported number of eye cancers at Belle, West Virginia, as data from the Connecticut Tumor Registry would indicate that among individuals 55 years of age and above, only 1 of every 500 cancers diagnosed should be eye cancer.

On May 26, 27 and June 2 and 3, Walter Chrostek, a NIOSH industrial hygienist visited the Belle plant. After meeting with management and union representatives, the industrial hygienist walked through the plant to observe plant operations, the products manufactured, including raw materials

and principal intermediates, and the controls used. Before leaving the plant he offered recommendations for improving existing ventilation systems to reduce employee exposure. Following DuPont's submittal of a list of approximately 170 chemicals used at the plant, NIOSH began to review the literature on these chemicals for their potential adverse health effects. Although the Subcommittee originally became interested in the Belle plant because of nitrosamine levels in the vicinity of that plant, good occupational health research would dictate an evaluation of all chemicals to which workers are exposed.

On July 13 and 14, a multidisciplined team of NIOSH investigators consisting of Walter Chrostek, Betsy Egan, an epidemiologist, and Dr. Channing Meyer, made an additional visit to the plant to assess the adequacy of personnel and medical records for use in an epidemiologic study. In addition, the individual personnel and medical records of the eye cancer cases were reviewed. At that time, NIOSH was informed that DuPont was conducting its own epidemiologic survey of the Belle Plant, using a tumor registry DuPont had maintained on all employees since 1956. It was agreed that we would review the DuPont survey before implementing a separate NIOSH study. To assist our review, we received some information on July 30 from DuPont on the incidence and mortality rate of cancer at the Belle plant and on the age distribution of the working population from 1956-76. On August 23 and 29, we received a report of the DuPont epidemiologic study and on August 29 we received additional data, including a computer listing of the DuPont cancer cases in their registry. In addition, copies of past DuPont epidemiologic studies, and a summary of

their methodology was included. We wish to thank DuPont for submitting their data and point out that few companies have devoted this much effort towards evaluating occupational health problems.

The scientists who prepared DuPont's report concluded that "further investigation of cases of eye cancer and kidney cancer at the plant are in order. The difference between observed and expected numbers for these two types of cancer are statistically significant by all comparisons made." The report continues, "It is not known, then, whether the statistically high cancer incidence at Belle is work-related or whether it results from personal factors extraneous to the occupational environment. It is also possible that any excess is a random fluctuation due to chance alone." In addition to excess eye and kidney cancer among employees at Belle, DuPont data suggest that they are at increased risk of lung cancer. These results are apparent in spite of methodologic shortcomings, most of which would tend to minimize or obscure the true cancer risk.

Some of these methodologic shortcomings are mentioned in the report. To determine what cancer rates could be expected, the study used three comparison populations: other DuPont employees, Kanawha County death rates, and national rates estimated from a limited survey done by the National Cancer Institute from 1969-71. Their report noted problems in using these comparison populations, but concluded that no more appropriate data were available, particularly morbidity data.

As the report recognized, the National Cancer Institute (NCI) data are from 1969-71, and the DuPont data are from 1956-76. This does not take into account that trends in cancer incidence change over time. Furthermore, the NCI survey was based upon all primary tumors rather than

individuals with tumors, while the DuPont data were based upon individuals with tumors. Since the occurrence of one tumor increases the risk of developing a subsequent lesion, multiple tumors are fairly common. Neither the NCI data, as used by DuPont, nor data from other DuPont plants would take into account regional and ethnic differences. Using Kanawha Valley residents as a comparison population avoids that problem, but poses another. The county is heavily industrialized including companies using known carcinogens such as vinyl chloride, chloroform, and asbestos. As the DuPont report points out, lung cancer is prevalent in the area.

In addition to these shortcomings, our preliminary analysis indicates that cancer rates of Belle employees may be higher than DuPont reported. The list of Belle employees who died from cancer was restricted to those who died while employed at the plant or those who worked and lived long enough to qualify under the DuPont pension plan. To qualify for a pension, a worker had to have been employed for 10 or more years and be 60 years old. The list would not include workers who left the plant for health or other reasons at an earlier age. Since occupational cancer usually does not become manifest for at least 20 years after exposure, terminated employees who later developed cancer would not be counted.

The demonstration of increased cancer among employees at Belle, West Virginia, in the face of these limiting factors, clearly indicates the need for further NIOSH investigation which may include the following:

1. environmental monitoring for chemicals which are known to have adverse health effects;
2. evaluation of the mutagenic effects of various chemical exposures, using both laboratory bioassay and field studies;

3. verification of the cancer list provided by Earl McCune, Safety Chairman for the Association of Laboratory Workers;
4. a study of all workers at the Belle plant, including terminated employees; and
5. acquisition and evaluation of pathologic tissue for all reported cancers.

Mr. Chairman, Dr. Wagoner and I will be pleased to answer any questions you or Members of your Subcommitte may have about these or other NIOSH investigations.