1983; 3) all hourly production workers who had been engaged in the esterification of 2,4,5-T and 2,4-D between 1960 and 1971. Employment in these departments was ascertained from a computerized plant personnel records database called the Medical and Environmental Health Inventory (MEHI) maintained by the company. PCP and lower chlorinated phenols (o-chlorophenol, p-chlorophenol, and 2,4-dichlorophenol) were produced in physically adjacent departments from 1938 to 1978 creating opportunities for cross-exposure. From 1969 to 1978 these departments were merged into a single administrative unit, and separation of exposure (PCP vs lower chlorinated phenols) was based on job titles rather than departmental classifications.

An internal audit of the MEHI database revealed an overall error rate of 2.3% on occupational exposure variables. An external audit revealed that approximately 9% of exposed workers could be missed by relying on this database alone. The plant medical department had maintained a registry of workers who were undergoing medical surveillance for chloracne beginning in 1970. Twenty nine production workers on this chloracne registry who met the definition of exposure were included in the exposed group. Maintenance and other workers who were noted to have chloracne on these plant medical records, with the exception of workers who were exclusively engaged in the production of PCBs or chlorinated benzenes, were also included as a separate exposure subgroup. These workers were included as a separate subgroup because, prior to 1983, personnel records did not specify the departmental assignments of maintenance workers.

The unexposed comparison population was defined as workers who had ever been employed at this same plant on or after 1931, who were alive at the time of sample selection, and who met the following definitions of no exposure: 1) had not worked in any of the exposed departments; 2) had not worked in maintenance; 3) had not worked in other departments with potential exposure to CDDs and CDFs (PCBs, chlorinated benzenes, derivatives of 2,4-dichlorophenol, or the analytical laboratory); 4) did not work in departments which were immediately adjacent to chlorophenol production. A sample of these unexposed

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