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MONSANTO COMPANY'S TRANSPORTATION EMERGENCY RESPONSE PROGRAM

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Timing, technology and individual training were key factors in developing Monsanto Company's unique system of responding to hazardous materials transportation emergencies.

The timing of Monsanto's decision to upgrade the emergency response system was coincidental to a valuable development in information gathering within the company. A massive new medical and environmental health information computer system became the vehicle for storing pertinent data and being able to retrieve it in emergencies. It was a small step to expand the data banks to include spill control contractors, local regulatory agencies and a complete rundown on chemicals used, produced or shipped by various Monsanto plants.

Detailed accessible information, however, was only part of the system. Individuals at every Monsanto plant were designated as coordinators and trained to respond to emergencies which involve their plant's products and raw materials.

In addition, special "mutual aid" training was given to a select number of individuals from plants located along major transportation corridors. This mutual aid training allows a near-the-scene Monsanto plant to respond for a sister plant, possibly located hundreds of miles away, saving valuable time during the initial stages of an incident.

Thus, a decentralized network of trained individuals plus the highly centralized, yet readily accessible bank of vital information provides an emergency response capability at Monsanto which is unique in the industry.

MERIT

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S. H. BRAND
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EMERGENCY RESPONSE

Monsanto uses over 2,000 pieces of equipment--rail cars, barges, trucks, and ships--each day to move its over 100,000,000 tons of material annually. This volume of material includes over 650 materials classified as hazardous according to Department of Transportation regulations. It covers products ranging from electronics to plastic bottles, textile fibres to aspirin, and process control values to the playing surface of a soccer field. The 40 plants that produce these chemicals in the United States have had trained teams responding to transportation incidents for over 25 years.

We have few significant transportation incidents; our incidents typically are minor with our current level of CHEMTREC calls running about 6 or 7 per month. However, because of the public perception of hazardous materials and our continuing sense of social responsibility, we felt the need to upgrade our emergency response program to provide an improved and uniform level of response across the company and, more importantly, to increase the speed of getting trained response teams to the scene of a transportation incident. In 1980, we assigned an individual full time to develop and carry out a modern and progressive emergency response program. Called MERIT--an acronym for Monsanto Emergency Response Information Teams--the program was put in place in 1981. The basic premise for the MERIT program can be explained in this way:

- o The shipping plant has the prime Monsanto responsibility for its materials in a distribution incident.
- o Each plant is trained to respond to all of its shipments and inbound raw materials.
- o Select plants in key geographic areas are trained to effectively aid Monsanto sister plants by responding to nearby incidents.
- o MERIT Teams will respond to non-Monsanto emergencies if requested to do so by CHEMTREC or local authorities.
- o Centralized data generation and training produces more effective and timely results.

In brief, the program can be described as containing four parts--a Monsanto emergency center, plant MERIT Coordinator and response teams, central database, and mutual aid. I will address each segment separately.

The first segment is emergency center. This center is located at our company headquarters in St. Louis and is staffed 24 hours a day, 7 days a week. It is the central receiving point for CHEMTREC calls. The CHEMTREC calls are received as a visual screen as well as a "hard copy" to minimize transportation of letters and errors since we deal with complex chemical terms. Additionally, this center occasionally receives calls concerning distribution incidents from other sources. The emergency center is equipped with an on-line computer which allows us to enter the chemical compound and identify the producing plant to be contacted in the event of an incident, if that information has not already been supplied by CHEMTREC.

The next, and most important segment, is the plant MERIT Coordinator and Response Team. The MERIT Coordinator is designated as the prime transportation incident contact at the plant site. It is his job to implement the Monsanto

philosophy in his dealings with the local emergency services and carrier, as well as federal and state agencies at the incident scene. He develops the transportation incident plan specifically for his plant. He identifies and procures equipment for his team. He trains his personnel. He receives the call from the emergency center and in turn contacts the scene to obtain more information as well as to provide additional information to the scene to properly handle the emergency. He is charged with the responsibility of making the decision to dispatch a team if one is warranted, plus keeping CHEMTREC informed of the status of the incident as time progresses. He is Mr. Monsanto to the outside world in a distribution incident.

The next segment is the computerized central database. The database has been in the process of development for some years, and it is referred to internally as the MEHI program. MEHI represents Medical Environmental, and Health Information System. MERIT uses a portion of the MEHI program tapping into the primary chemical database to do part of its job. All of the chemicals we produce (products, intermediates, or waste streams) as well as the inbound raw materials we use, are listed in the MEHI database and are associated with something in the range of 50,000 synonyms. This allows us to ultimately identify a plant that produces or uses a chemical and to do this within a few seconds. Additionally, the MEHI/MERIT system includes names and phone numbers of plant sites as well as the plant contacts that will be needed in a transportation incident. We also identify by state cleanup contractors with emergency phone numbers, waste disposal sites plus state and federal regulatory agencies that are typically associated with a transportation incident. We also include the Materials Safety Data Sheets for Monsanto products. With this volume of information in the computer database, a MERIT team at the scene can call the center and request specific information.

With this capability, virtually no matter what the situation is, a person can get the information he needs quickly from an approved source.

The fourth segment of the MERIT program concerns itself with mutual aid. Inappropriate action during the initial stages of an incident can severely increase the complexity. Again, we are fighting the enemy, time. In an effort to shorten the time needed to get our trained experts to the incident scene quickly, we studied historical records. These showed a tendency for the incidents to cluster in certain geographical areas associated with major distribution artery interchanges. Taking advantage of that phenomenon, we identified 13 key areas. We selected an appropriate Monsanto plant central to each of these areas and have identified it as a MERIT Mutual Aid plant. The MERIT team at each mutual aid plant has received additional training and materials that will allow them to respond to Monsanto products that are not produced by that site. This can save a considerable time in getting a trained team to the incident scene. As I mentioned earlier, the shipping plant retains the prime Monsanto responsibility for responding to an incident. The mutual aid plant now gives the shipping plant the capability of having rapid assistance provided by a sister plant to resolve minor problems or to provide the initial MERIT response capability until the shipping plant team can arrive at the scene.

As an adjunct to the MERIT program, we have developed carrier guidelines that identify what we expect the carrier capabilities to be as it relates to a transportation incident when handling our materials. This is a key consideration in our carrier selection process.

Other aspects of the MERIT program include periodic issues of a MERIT bulletin which identify key areas of concern in the industry and provides a

learning experience as our plants share their handling of transportation incidents. Additionally, we have biennial MERIT Coordinator meetings where we exchange experiences, identify areas that require new technology or improved techniques to more efficiently handle an incident. Select portions of this program may be converted to a slide/cassette program and distributed to the plants for use by the plant MERIT Coordinator as an aid in training his teams.

Throughout this presentation, I have referred to Monsanto's participation at an incident as the "handling of an incident." This point needs clarification. In the United States the carrier (or spiller) is legally responsible for the handling of the incident, with Monsanto's prime function at the incident being that of providing technical advice to the carrier and local emergency services present at the incident. On the rare occasion that no one is present at the scene to coordinate and assume the leadership role of handling an incident, we have trained our teams to handle an incident.

This describes the Monsanto Company's Transportation Incident Handling program. A significant factor in the smooth and rapid flow of information during the important initial stages of an incident, in fact the starting point of our MERIT system, is the CHEMical TRansportation Emergency Center better known as CHEMTREC. CHEMTREC is a public service organization funded by the chemical industry through the Chemical Manufacturing Association (CMA).

CHEMTREC began operating in September of 1971. CHEMTREC's purpose is twofold: First, it provides immediate advice to callers on how to cope with chemicals involved in a transportation emergency. Next, it activates the shippers response system so they can take appropriate followup action including sending a team to the incident.

Although CHEMTREC is funded by CMA's 200 member companies, its services are open to all shippers of chemicals in the states. More than 25% of CHEMTREC

activities involve over 600 non-member chemical companies. By the end of its first 10 years of operation, the center has received 146,000 telephone calls. Of that, only 12% were related to transportation emergencies involving a chemical release--roughly 17,000. The remainder of the calls were associated with minor transportation emergencies, warehouse problems, plus calls from private citizens who had contact with a chemical and didn't know what to do.

CHEMTREC has been officially recognized by the Department of Transportation as the central emergency response service for dealing with incidents involved in the transportation of hazardous materials. The Hazardous Materials Transportation Act of 1974 called for the Secretary of Transportation to establish and maintain a central reporting system and data center. Since CHEMTREC was already well established, DOT gave CHEMTREC its approval to provide the services required by law. I might add this not only assures the nation a continued emergency service, but also does it for considerably less money.

CHEMTREC works in this fashion: participating chemical companies include in their shipping documents instructions on how to reach CHEMTREC by phone in the event of a spill, leak, fire, exposure or accident involving their products in transit. The emergency call to CHEMTREC is taken by a member of the CHEMTREC communicator team who records the details in writing, on a video screen, and by tape recorder. From a file of 50,000 product trade name listings, he can retrieve the best available information on the chemicals involved. This puts him in a position to answer many of the questions that come from the scene of an incident such as: Is it dangerous? Can the cargo explode? Will it burn? Can we use water on it? What is the best extinguishing agent? How can I neutralize the chemical? Can I approach the scene without breathing equipment and protective clothing? Do I need special clothing and equipment?

After the how-to-handle-it information is passed to the caller, CHEMTREC immediately relays relevant facts to the company that shipped the product. At that point, responsibility for further guidance rests with the shipper.

Producers of some unique chemicals have formed mutual aid systems to make certain that incidents involving those chemicals are taken care of as quickly as possible. Regardless of the shipper, the member nearest the transportation incident will be notified. He would evaluate the problem and dispatch an emergency response team if needed. Examples of this are the CHLOREP teams representing the Chlorine Institute and the Pesticide Safety Team Network (PSTN) of the National Agricultural Chemicals Association. Each of these programs have approximately 50 emergency teams throughout the U.S.

Additionally there are mutual assistance programs that exist for other products including vinyl chloride, phosphorus, hydrogen fluoride and hydrogen cyanide. Cooperation among mutual aid groups saves time, often the essential element in protecting the public.