

U.S. DEPARTMENT OF ENERGY MOTOR CARRIER EVALUATION PROGRAM

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ABSTRACT

The transportation of substances specified in Title 49, Code of Federal Regulations (CFR) section 172.101 as hazardous materials is a process that requires a detailed investigation of the supplier (carrier) before shipments are released in its care.

The myriad of regulations and the potential liability that a manufacturer or shipper of these materials incurs does not end once the carrier clears the gates, but extends until the material has safely reached its destination and is safely stored. In many cases the shipper of these materials does not take a careful look at the carrier, and the results could be devastating. All too often, carriers are trusted to "do the right thing".

The Department of Energy's Transportation Management Division has taken a positive step in insuring that carriers are highly qualified before they are permitted to transport any material classified as hazardous in Title 49, CFR. The process utilized by the DOE is the Motor Carrier Evaluation Program (MCEP), the corner stone for building a partnership with the carriers and ensuring that all hazardous materials are handled in a safe manner. Carriers are evaluated and rated, based on their performance in those areas that concern themselves with safety while in transit. This program is an essential part of the DOE's commitment to safety.

MOTOR CARRIER EVALUATION PROGRAM

Regulations, regulatory agencies, rules, and laws, taken together, all form a massive maze that is difficult to navigate. Charting a course means defining the process; hazardous material being an excellent example. Answering the following questions defines the course. What is or what constitutes a hazardous material? And what is going to happen with that material? For the purposes of this discussion the material is being transported; therefore, the definition for hazardous material comes directly from Title 49, *Code of Federal Regulations*, part 171.8. It states: "hazardous material means a substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated." A listing of these materials is contained in parts 171.101 of Title 49, CFR. As used in this discussion the definition above is encompassed in the term hazardous materials.

The concern for the safe disposal and storage of hazardous materials has oftentimes overlooked the fact that in many cases these materials must be transported between various locations throughout the United States. The Transportation Management Division (TMD) of the U.S. Department of Energy (DOE) has made a commitment that as these materials are transported, they are given the same care and safe handling by the carrier, as if they were moved internally (within DOE site boundaries). The TMD has looked very carefully at the transportation process. As the DOE's role shifts from production to cleanup, transportation will become extremely important. Those widely dispersed hazardous materials (including radioactive ones) must be consolidated for safe disposal and storage into a few major sites, which will require increased transportation. For example, the chemical wastes generated through years of defense production activities must be transported to commercial treatment, storage, and disposal (TSD) facilities.

The TMD evaluated the transportation process to identify those risks associated with the movement of hazardous materials. As evidenced by recent hazardous material transportation-related incidents, even if the carrier was totally responsible for the incident, the shipper shared in or was given full responsibility for the incident because hazardous materials were involved. In most cases the carrier completely lost its identity, leaving only the shipper as the identified party in the accident. In fact, the cause of the accident was completely blamed on the shipper, and all manner of liability was directed toward the shipper, even though the carrier or some other party was at fault.

The DOE is very committed to maintaining an excellent safety record with regards to the transportation of hazardous materials. In reviewing the transportation process, the TMD determined that the key elements to effective and safe handling of hazardous materials, including radioactive materials, are as follows: 1) the integrity of packages, 2) strict adherence to regulations and procedures, 3) the use of trained personnel, 4) complete management support, and 5) the use of qualified commercial carriers. These elements define and create the "arch of safety" (see Fig. 1). This arch demonstrates the TMD's commitment to safe handling of all hazardous material shipments. The TMD feels that internally the first four items are under control.

This control is documented in DOE orders and detailed operational procedures, which are requirements for DOE and/or its contractors. Those risks associated with the packaging requirements, regulations and procedures, trained personnel, and management support are well managed when the record of incidents within the DOE complex is examined. Issues concerning safe handling of hazardous materials on DOE sites are top priority and considered well managed. To the TMD, what seemed to be lacking was the same management control of the risks associated with hazardous materials while they were in transit, the final block to the arch. The TMD recognizes that the transportation process means sacrificing

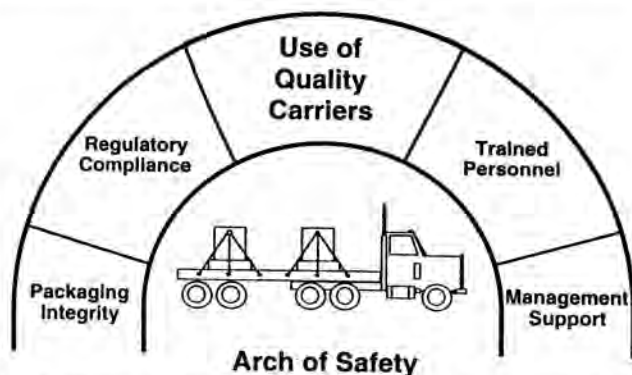


Fig. 1. There are five key elements to DOE's hazardous material shipping program.

control to a carrier outside the confines of the DOE complex. Short of escorting every shipment tendered to a commercial carrier, the DOE must ensure that the carrier (drivers and management) is committed to the first four building blocks in the arch. The DOE must establish a partnership with the carrier. By establishing this partnership, the DOE recognizes that the responsibility for safe handling of hazardous materials extends beyond the physical gates of a DOE facility. Through the establishment of a partnership with its carriers, the DOE retains control of the shipment from origin to destination.

In assessing the risk associated with transportation of materials, especially hazardous materials, the DOE reviewed the areas that are the most critical to safety. Using figures reported by the Research and Special Programs Administration (RSPA) of the U.S. Department of Transportation, for incidents between 1984-1991, the TMD first determined which transport mode was the most likely to be involved in an incident. During the time frame of the report, a total of 55,283 incidents, involving all types of hazardous material, were reported for all modes of transportation. Of these incidents, 44,609, or 81%, were for highway (truck) transportation. The next highest percent, 15%, was for transportation by rail, with the balance for all other modes combined. Therefore, it was obvious that the TMD should begin focusing on highway transportation, because the vast majority of incident involved this mode of transportation.

Having narrowed the area of concentration down to a specific mode, the TMD determined that the next tier of investigation had to deal with the factors causing these incidents. The statistics reported by the RSPA break down the major causes of incidents with regards to hazardous materials into four categories: 1) human error, 2) package failure, 3) vehicle accident and 4) other. During 1991, of the incidents reported by highway, 79% were due to human error, 15% package failure, 3% accident, and 3% other. Given that 81% of the accidents reported were highway related and of those, 79% were due to human error, TMD made a strategic decision that there must be a process to evaluate motor carriers. This process would establish how a carrier was dealing with reported incidents and the causes of those incidents, including the human factor.

The Motor Carrier Evaluation Program (MCEP) was developed based on this information and, in response to stakeholders who have expressed concern regarding the criteria used by the DOE in choosing its carriers, was directed specifically toward those carriers entrusted with shipments of hazardous materials. The original intent of the MCEP was to

evaluate only those carriers that were used for shipments of the most visible forms of hazardous materials: Highway Route Controlled Quantities (HRQC), radioactive, and truckload quantities of hazardous materials. The program has now evolved into an evaluation of all DOE highway carriers, and the TMD is in the process of piloting a rail carrier evaluation program similar to the MCEP. One of the country's top rail carriers is working very closely with TMD in this pilot project.

The statistics used in this process support TMD's position that in the arch of safety, four of the five categories were being controlled internally and what was needed was the same assurance of control externally, i.e., highly qualified carriers. The carriers are evaluated against their commitment to: 1) strict adherence to regulations, 2) the use of trained personnel, 3) complete management support and, 4) integrity of packages (given that their equipment, tractors and trailers, be considered the package).

The TMD has established the need to evaluate highway carriers, and the MCEP establishes the mechanism to assess commercial carriers. This assessment ensures that any shipment of hazardous materials, being transported from or to a DOE site, would be handled using similar procedures and practices by the carrier as those procedures and practices used by DOE and/or its contractors. Therefore, a strategic decision was made to use only highly qualified carriers. This meant a process needed to be developed to appraise carriers by a fair and impartial process. This process or program was developed by the DOE's TMD and evaluates commercial carriers that are being or will be used to transport hazardous materials.

The MCEP verifies highly qualified carriers and is the final building block in the arch of safety. The MCEP defines a standard methodology for assessing commercial motor carriers that will be transporting hazardous materials for the DOE. These materials, incorporated by reference, are listed in Title 49, CFR, which also includes the rules and regulations governing transportation and carrier safety.

As previously stated in this document, a shipper of hazardous materials can no longer absolve itself of responsibility, should a carrier have an accident or incident while transporting a shipment of hazardous material tendered to it by the shipper. In the past, the carrier was held solely responsible. The carrier and shipper can be, and usually are, held jointly responsible for remediation and environmental impact. But oftentimes it is the shipper who becomes the focal point, with the identity of the carrier being lost. Therefore, it is imperative that the DOE ensure that the carriers selected to transport hazardous materials are: 1) highly qualified, 2) as committed to the safe handling of hazardous materials as the DOE themselves, and 3) prepared to react or respond to an accidental spill or release of a hazardous material. The selection process dictates that the DOE view the commercial carrier as a partner. This unique *partnership is essential*. The carrier is an extension of the DOE, and the carrier's commitment to safety must be as strong as that of the DOE.

The MCEP evaluates carriers in every facet of their operation and is based on cooperation and teamwork. Currently, in its early stages, this program is voluntary; carriers are not required to participate in the evaluation. As the program matures it is likely that the MCEP will become mandatory and that all carriers will have to agree to the evaluation. Based on a percentage score, carriers are ranked as "excellent" (score 90%-100%), "very good" (score 80%-89.9%), "average" (score 70%-79.9%), and "below-average" (score 60-69.9%). Carriers

that score in the "average" or higher receive a positive recommendation; carriers that score "below-average" receive a negative recommendation, which states that the carrier should not be used to transport hazardous materials for the DOE. This process defines a highly qualified carrier as one scoring in the "excellent" category.

The MCEP is a defined methodology for carrier evaluation and assessment process. The program contains areas of concentration or attributes that DOE is seeking. First there are "required" attributes. These are so important that if a carrier does not meet them, that carrier will not be considered for DOE hazardous material shipments. Second, there are those attributes that are deemed to be "essential." In this area a carrier must meet most of the requirements. Third, there are those attributes that are deemed to be "desirable." These are important, but if a carrier does not meet all of them, it will not be hindered in its ability to participate in moving shipments for the DOE. "Desirable" attributes are additional services or enhancements that make a carrier unique. Together, these attributes give DOE a clear understanding of the carrier's operating capability, qualifications and its commitment to safe transportation.

These attributes are an important part of the shipper/carrier partnership. All carriers are evaluated against the same attributes. Specialized carriers, such as tank carriers, waste haulers, or household goods movers, have additional requirements that are important in the evaluation process and these are used to develop the overall score.

The "required" attributes **must be met** by all prospective commercial carriers of radioactive and hazardous commodities, including waste. The required standards summarized here are only a partial lists of the Federal Motor Carrier Safety Regulations (FMCSR) detailed in Title 49 CFR, parts 383-399.

- Carriers should have a program in place to verify that drivers have only one commercial driver's license. (49 CFR Part 383)
- Drivers must meet all qualifications listed in 49 CFR 391.11.
- Drivers must:
 - Perform pre-trip vehicle inspections
 - Observe railroad crossing and drawbridge precautions
 - Be aware of cautions for hazardous road conditions
 - Never possess or be under the influence of drugs, other substances, or intoxicating beverages.
 - Have received training required by 49 CFR part 177.816
 - Comply with the driving time in 49 CFR Part 395.3.
- Every motor carrier shall **systematically inspect, repair, and maintain** all motor vehicles subject to its control. (49 CFR 396.3)
- Motor carriers shall ensure that vehicles containing hazardous materials must be operated over routes that do not go through or near heavy populated areas, tunnels, narrow streets or alleys. (49 CFR 397.9)

- Carriers must meet the financial responsibility and insurance certificate requirements specified in 49 CFR 387.
- Carriers transporting HRCQ of radioactive materials must have a hazardous materials training program meeting the requirements of 49 CFR part 177.825.

The "essential" attributes for motor carriers transporting hazardous materials are partially listed below. These attributes are not required but rate heavily in the scoring process. Therefore, by meeting more of these attributes a carrier has a better chance of moving up in the scoring matrix.

- Several verifiable years of experience in transporting hazardous materials.
- An accident ratio of not more than 1.0 per million miles.
- 24-hour central dispatch capability to respond to emergencies.
- Strong indications of being financially stable.
- A written contingency plan in place for emergency response.
- Evidence that safety and regulatory compliance are highly regarded in the carrier's organizational structure.
- A driver training program consisting of formal classroom training, taught by knowledgeable instructors.
- Policy, preferably written, in regards to selecting drivers for hazardous material transportation.

The attributes labeled "desirable" are designed to show or demonstrate the carrier's proactive stance on a number of issues. They are not meant to be either required or essential but may have scoring implications. Again, this is only a partial listing.

- Has the ability to electronically trace shipments in transit.
- Possesses more than the minimum insurance.
- Has an adequate inventory of equipment.
- Is capable of offering specialized services when required. Not required of carriers who routinely do not or cannot provide:
 - Signature security service
 - Dromedary service
 - Armed guards
 - LTL hazardous waste transportation
- Has emergency response personnel/equipment.
- Rewards employees for safe driving.

When applicable, the company has a mechanism in place to ensure that its owner/operators are regularly maintaining their equipment and insists on annual inspections at company facilities to ensure compliance with its maintenance policies.

The three defined attributes, "required," "essential," and "desirable," are those that the DOE has identified as critical to establishing a partnership and to determining and defining "highly qualified" carriers.

In addition, the carrier's safety record is researched. The main component of this research is obtaining a SafetyNet

report. The SafetyNet report is a comprehensive summary of a motor carrier's interstate safety performance over a 3-to 4-year period. It is a profile of consolidated information from state and Federal sources covering vehicle inspections (including drivers), accident summaries, a history of compliance, and Federal safety ratings, compiled by the Motor Carrier Management Information System (MCMIS) for the Federal Highway Administration (FHWA) Office of Motor Carriers (OMC).

The methodology of the MCEP consists of an onsite visit by a team that consists of DOE and/or contractor personnel. All team members have a varied and vast background in the transportation industry. They gather information relative to the attributes in a face-to-face question and answer session with the carrier's top management; obtain copies of pertinent documents that verify compliance and carrier authority; audit drivers's and maintenance files for compliance and completeness; and verify information contained on the SafetyNet report. Onsite facilities are toured and operations such as dispatch are observed. In general, a "walk-through" audit of operations is performed. If there are onsite maintenance facilities, then those facilities as well as any equipment available is inspected. Several team members are certified by the Commercial Vehicle Safety Alliance (CVSA), and the vehicles are inspected to the North American Standards for safety. These standards are the same standards that are used by local, Federal and state inspectors and law enforcement agencies for safety compliance with applicable vehicle safety regulations.

After the onsite visit the team reconvenes, and all the information gathered is analyzed and answers to the MCEP evaluation questions discussed and compared by team members. The MCEP contains scoring sections that use predetermined matrixes and contain weighted scores, so that all carriers are fairly and impartially evaluated. Based on the

answers to the questions, scores are assigned to individual questions and are totaled to generate an overall rating.

So far, carriers are selected for evaluation, based on the volume of business that they are currently generating with DOE. This information is gathered from the Shipment Mobility/Accountability Collection (SMAC) report. Carriers that are high on the list of used carriers are evaluated each year; all others at least every 2 years. This will ensure that the information remains current, and if there are any drastic changes, they are implemented as soon as possible. TMD wants this program used by all DOE sites to evaluate those carrier that serve a particular or given area. In the situation where a carrier may handle shipments for several sites or is a nationwide carrier, it will be evaluated by a team consisting of members from Headquarters, other DOE site traffic managers and contractor traffic management. Thus far, over 70 carriers have participated in the program, some at their own request and others at the request of outside parties.

The TMD recognizes that the responsibility for DOE shipments of hazardous materials extend far beyond its gates. TMD considers the carrier a partner whose driver/carrier performance is critical to safe transportation of DOE hazardous materials. Once a shipment has left the gates of a DOE facility, that shipment is entrusted to a motor carrier until delivery to final destination. Therefore, it is imperative that the transportation process be viewed as a partnership. The MCEP is the most important step in establishing and fostering the partnership. The DOE's commitment to safe transportation is well documented and demonstrated, but to complete the arch of safety it is critical that the DOE knows the carrier's commitment. The MCEP is the mechanism developed by the TMD to establish that commitment and to ensure that the DOE, it's contractors, and facilities are using only highly qualified carriers.