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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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Forwarded to:
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Secretary
Department of Transportation
400 7th Street, S.W.
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

I-79-5 through -11

The response to hazardous materials emergencies that result from transportation accidents is of continuing concern to the National Transportation Safety Board because of the dangers posed to the public and emergency response personnel. Observations of the emergency response following the March 1977 railroad derailment near Rockingham, North Carolina, involving a radioactive material shipment, prompted the Safety Board to initiate a special investigation into emergency plans for such accidents. The investigation disclosed significant inadequacies in the plans. 1/

As our analysis was being completed, our investigation of the facts and circumstances in the April 1979 railroad derailment near Crestview, Florida, 2/ raised additional concerns about the Department of Transportation's plans for a national hazardous materials emergency response center, which will interact with local emergency response operations similar to those in the Crestview accident. The Safety Board believes that the DOT needs to act to ensure that Federal and other plans for handling hazardous materials transportation emergencies will mesh effectively and will adequately address safety problems identified in these investigations.

During its investigation of the Rockingham accident, the Safety Board found that no single authority directed or coordinated the handling of the emergency, that communications among the personnel at the scene were ineffective, and that

1/ "Special Investigation Report—Onscene Coordination Among Agencies at Hazardous Materials Transportation Accidents" (NTSB-HZM-79-2).
2/ "Railroad Accident Report—Louisville & Nashville Railroad Company Freight Train Derailment and Puncture of Hazardous Materials Tank Cars, Crestview, Florida, April 8, 1979" (NTSB-RAR-79-11), and "National Transportation Safety Board Hazardous Materials Spill Map, Crestview, Florida, April 8, 1979."

there were serious delays in evaluating the radiation hazard. On November 1, 1977, the Safety Board recommended that the DOT:

> Develop and disseminate guidelines for emergency response procedures in transportation accidents involving radioactive materials that will coordinate onscene leadership during all stages of the emergency and identify the responsibilities of the responding Federal, State, and local agencies in reducing injury and damage in such emergencies. (Class II, Priority Followup) (I-77-2)
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> Establish procedures to minimize the time required to identify radiation dangers at accident sites when radioactive materials are involved. (Class II, Priority Followup) (I-77-3)

In an April 24, 1978, letter, the Secretary of Transportation informed the Safety Board that the DOT "fully endorses both recommendations . . . ." However, to date neither recommendation has been implemented. The Safety Board has been holding recommendation I-77-2 in an "Open-Unacceptable Action" category and I-77-3 in an "Open-Awaiting Reply" status.

The response actions reflected deficiencies in emergency response plans that were applicable to the Rockingham accident. Ten plans of apparent relevance to the incident were analyzed by the Safety Board during its special investigation. The analyses disclosed deficiencies common to all plans. These deficiencies included lack of provision for (1) clear-cut command of the emergency response, (2) coordination of effort, (3) communications, (4) a command post, and (5) control of accident site access.

The principle of "command unity" or "one boss" for emergency situations has been widely recognized. When an emergency response involves only a few agencies whose personnel are familiar with one another, such as the fire and police departments in a small town, there is usually no problem in identifying the onscene commander or official-in-charge. However, when many diverse agencies arrive onscene, the onscene commander cannot always be identified. Therefore, a means for easily identifying and locating the onscene commander at the scene of a hazardous materials emergency is needed.

The Safety Board believes that existing emergency response plans for hazardous materials transportation emergencies should be reviewed critically to determine their adequacy. A comprehensive interagency effort will be needed to accommodate emergencies involving radioactive and other hazardous materials. Revisions to the plans should reflect actual experience, and establish reliable methods for identifying specific hazards that may be encountered by personnel at the accident scene.

In the Crestview accident, the health and safety of area residents, emergency response personnel, and wreck-clearing personnel were threatened for 9 days. Eight dangerous chemicals escaped from some of the derailed cars during the incident. More than 4,500 persons were evacuated from the area. Fourteen

persons were injured by exposure to the hazardous materials, and the Yellow River was threatened with pollution.

The Safety Board's analysis of the emergency response at Rockingham and Crestview reinforces its concern that an effective hazardous materials emergency response network be established under the leadership of the DOT to ensure prompt and adequate support for onscene officials handling such emergencies. As a result of its 1978 public hearing into derailments and hazardous materials, the Safety Board recommended on June 29, 1978, that the DOT:

> Supply the leadership required to establish an adequate nationwide hazardous materials emergency response network able to meet all facets of hazardous materials emergency response needs, using existing State and private resources whenever possible. (Class II, Priority Action) (I-78-10) 3/

In response to that recommendation, the Secretary of Transportation directed the U.S. Coast Guard to develop and implement a national hazardous materials emergency response center. The proposed response center was to be built on the framework of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 1510) and utilize the National Response Center (NRC), Federal On-Scene Coordinator (OSC), National Response Team (NRT), Regional Response Team (RRT), and also industry assistance.

Because the release at Crestview threatened to pollute the Yellow River, the national contingency plan was implemented. The Safety Board's observations of how the contingency plan functioned indicate problems that must be resolved before the plan is enlarged into the basic plan for the network. Some of these deficiencies were also noted in an NRT report of the OSC/RRT activities in the Crestview emergency.

Implementation of an effective network, in combination with adequate onscene communications, should provide onscene officials with the advice needed to determine the dangers involved within minutes after initial notification. The network should be able to provide updated advice as needed until the emergency is over. At no time during the first 8 hours of the Crestview emergency did the Federal OSC or RRT provide the community officials with the benefit of their expert advice. Furthermore, the RRT was disbanded and the OSC left the accident site 3 days before the emergency was over.

Without an OSC or RRT to help them, officials at Crestview initiated and relied on their own efforts to identify the hazardous materials involved, the threats posed by these substances, and sources for expert advice. As a result of an

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3/ "Safety Effectiveness Evaluation—Analysis of Proceedings of the National Transportation Safety Board into Derailments and Hazardous Materials, April 4-6, 1978" (NTSB-SEE-78-2).

earlier derailment, the local officials had formulated their own contingency plan which they used during this emergency. Despite the lack of OSC and RRT assistance, the local officials performed effectively with the limited resources available, and they are to be commended for their actions. Their success was abetted substantially by the specific circumstances of this accident, including its location in a sparsely populated area and the early outbreak of fire which resulted in an airborne plume of dangerous gases downwind, rather than a ground-level plume which would have been more hazardous to onscene personnel. The Safety Board believes unavailability of the OSC or RRT to deliver advice to local officials during the early stages of an emergency is a serious flaw in the current system which must be corrected. The DOT Task Force on Hazardous Materials Transportation reported that "no matter what mechanism is established, the need for a strong working relationship with State and local officials is of utmost importance to smooth handling of an emergency." 4/ The Safety Board concurs fully with this statement.

During the first day of the emergency at Crestview, communications to and from the command post at the site were extremely heavy. This was due in part to the lack of a single emergency telephone number for the local officials to call to seek advice or help from a national emergency response center. It was also due in part to the uncoordinated dispatching of experts to the scene. Except for the experts called in under the local emergency plan, Federal and industry personnel sent to the scene were dispatched at the request or direction of persons who were not in command of the emergency response operations. The result was that each organization sending personnel felt obligated to acquire additional information about the incident to justify its action, or to identify special items that its personnel would need at the site, such as protective equipment and special tools. In the confusion of the early hours of the emergency, the first chlorine specialist team was turned back by local officials when they learned the team was en route. Such problems could be substantially alleviated by coordinated dispatching of specialists to the scene through a national emergency response center.

The use of an Air Force AC 130 aircraft with communications links to the ground observers provided aerial observations of the plume that were essential to the local officials arriving at a decision to evacuate people in the projected path of the plume. To assure that the AC 130 had uncontested access to the site in the airspace above the area, Crestview officials requested the Federal Aviation Administration's Flight Service Station (FSS) at Crestview Airport to prohibit entry into that airspace. The FSS complied and issued a Notice to Airmen (NOTAM) prohibiting unauthorized aircraft from entering the area. The Safety Board believes that early availability of aerial observer aircraft with communications links to onscene officials provides information about the hazardous materials

4/ Report of DOT Task Force on Hazardous Materials Transportation, September 1978.

threats involved that cannot be acquired readily by any other practical means. This capability should be incorporated appropriately into the planned network.

The Safety Board recognizes that the present NRT/RRT/OSC operations under the national contingency plan are designed to prevent or mitigate pollution of waterways, rather than to provide advice and support in all hazardous materials transportation emergencies. The NRT's internal evaluation after the Crestview operations focused on the RRT/OSC performance relative to pollution control. If this system is to be expanded into the DOT's network, the pollution control objective must also be expanded to address safety concerns, beginning with the earliest minutes of the emergency. The DOT task force recognized that this would have to be achieved by assisting local authorities. To assure that local authorities are adequately served by the Federal system, the Safety Board believes that the local authorities involved should have an effective voice in postemergency evaluations of the Federal emergency response support delivered. This will require modification of evaluation procedures now used under the national contingency plan.

Therefore, the National Transportation Safety Board recommends that the Department of Transportation:

> Pursue action on Recommendation I-77-2 and expand it to develop and disseminate guidelines for planning emergency response to transportation accidents involving all hazardous materials. These guidelines should clearly delineate the onscene command structure, establishment of a command post and communications, and structure of the coordination of efforts, and require control of access to the accident site. Furthermore, the relationships and responsibilities of the responding Federal, State, local, and private agencies should be clearly identified. (Class II, Priority Action) (I-79-5)
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> Develop a universal, highly visible means for identifying the onscene commander and command post at the site of hazardous materials emergencies, and promote its use among Federal, State, and local government agencies and private organizations. (Class II, Priority Action) (I-79-6)
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> Establish procedures to enable the national hazardous materials emergency response network, being developed under Recommendation 2 of the September 1978 DOT Hazardous Materials Transportation Task Force Report, to provide for the rendering of advice to local public authorities in time to help them mitigate the effects of the incident during the earliest stages of an accident. (Class I, Urgent Action) (I-79-7)

Develop and arrange for distribution of a brief training program that will inform local public authorities regarding when and how to contact the planned national hazardous materials emergency response network, what specialized advice and supporting resources they can expect from the network when it is contacted, how the network will help them evaluate the effects of the actions they are taking, and how they can interact most effectively with the network. (Class II, Priority Action) (I-79-8)

Establish procedures that will coordinate the dispatching of Federal agency and industry representatives to the scene of a serious hazardous materials emergency, and integrate continuing communications with such representatives, through the planned national hazardous materials emergency response network. (Class II, Priority Action) (I-79-9)

Establish procedures to enable the national hazardous materials emergency response network to make military or civilian observer aircraft, with communications links to onscene emergency response officials, available to local authorities in serious hazardous materials transportation accidents, and to have unauthorized aircraft prohibited from the area. (Class I, Urgent Action) (I-79-10)

Develop procedures for local officials to participate in the evaluation of the services provided by the planned hazardous materials emergency response network and for managers of the network to report to these officials on actions taken in response to the evaluations. (Class II, Priority Action) (I-79-11)

Finally, the Safety Board would like to highlight its continued concern about the delay in establishing an effective nationwide response network. It has been over 2 years since the Board made related recommendations to the DOT for emergencies involving radioactive materials. Likewise, it has been over a year since the Board recommended that the DOT supply the leadership necessary to establish a network for all facets of hazardous materials emergencies. Accidents and hazardous materials emergencies continue to occur. Consequently, the Safety Board hopes that the DOT will expedite the development and implementation of an effective emergency response network.

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in the above recommendations.

By: James B. King
Chairman