Town of Burrillville
EMERGENCY OPERATIONS PLAN (EOP)

ANNEX F
EVACUATION

Town of Burrillville
Emergency Management Agency

Town of Burrillville
EMERGENCY OPERATIONS PLAN

Evacuation
Annex F

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EVACUATION

I. PURPOSE

Annex F, "EVACUATION" was developed to provide for an orderly and coordinated evacuation of the population in the Town of Burrillville should the need arise. There are several potential emergency or disaster situations that might require an evacuation of a hazard area or zone of risk in order to minimize vulnerability and protect residents of the community.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. The Town of Burrillville has identified several hazards as posing a significant potential threat:

   a. Hazards Identified are:

      (1) Hurricane/Tropical Storm
      (2) Urban Fire
      (3) Dam Failure
      (4) Transportation Accident
      (5) Hazardous Materials Incident
      (6) Winter Storm (severe)

   b. The Federal Emergency Management Agency (FEMA) further states that NO jurisdiction can be considered safe from the effects of a Nuclear Attack on the United States.

2. The rapid increase in population density in and around the growing number of areas vulnerable to large-scale natural and technological hazards has made planning and implementing mass evacuations one of the most complex problems facing the emergency manager. Hurricanes, nuclear power plant accidents, hazardous materials accidents and other potentially large-scale regional hazards can trigger an emergency relocation of vulnerable residents at rates and volumes that will drastically overload roadway networks, public transportation, public shelters and host medical facilities.

3. There are many hazards that could cause situations that would require an evacuation to protect all, or part of, the population when the jurisdiction is confronted by a major emergency or a disaster. Small scale, localized evacuations might be required due to: flooding, hazardous materials accident (chemical spill), major fire, dam failure, or a major transportation accident. Mass evacuation could

be required in the event of an anticipated nuclear disaster or a hurricane threat that could produce river and stream flooding.

4. Evacuating hazardous areas is the most effective action for protecting people in many disaster or disaster-threat situations. Many evacuations are carried out every year, and it is not unusual to hear about large-scale evacuations involving thousands or even tens of thousands of people. Evacuation operations can be accomplished more rapidly and effectively if planning is carried out and systems are developed and tested before they are needed.

B. Assumptions

1. The public will receive timely and authoritative official information pertaining to the need to evacuate. This information will be distributed utilizing the Town of Burrillville webpage, social media pages, code red network and by any other means feasible at the time the order is given.

2. The public, by and large, will act in its own interest and evacuate hazardous areas when advised to do so by local government authorities.

3. If necessary, local authorities will order and control a mandatory evacuation. Law enforcement officials will provide security in evacuated areas.

4. The number of people initially affected is not a satisfactory criterion for deciding whether or not to activate the emergency management organization. The nature of the threat, the possibility of escalation, the need for expert consultation, etc., must also be considered.

5. People who refuse to follow the evacuation instructions of public officials will be left alone until all who are willing to leave have been evacuated. Then, time permitting, further efforts will be made to persuade the stay-puts to evacuate.

6. People evacuating to public shelters will not be allowed to take pets, except seeing-eye dogs, into the shelter and will use some other consideration for their welfare.

III. CONCEPT OF OPERATIONS

A. General

Evacuation may prove to be the only practical means of protecting people from the effects of some disasters. Simply defined, evacuation is movement of people from a place of danger to a place of relative safety. Problems involved may range from minor to enormous depending on the dimensions, or characteristics, of the hazard and the evacuation.

There are several factors that must be considered when planning for evacuation. Among

these are the characteristics of the hazard itself. Hazard intensity, frequency, potential impact, and duration are significant elements to be considered. Other factors to consider include wind direction, temperature, humidity levels, time of day and status of precipitation. Evacuation decisions will be based on a careful review of all the factors obtained. At that time, officials can determine the number of people to be evacuated and the time and distance of travel necessary to ensure their safety. Another important facet is the availability of evacuation routes, their capacities, and their vulnerability to the hazard. The primary means of transportation during evacuation is the private automobile. Persons without private automobiles will be assisted, as necessary, by law enforcement and fire and rescue personnel to reach staging areas, reception centers, or shelters. This will additionally apply to persons whose automobiles have become disabled enroute and would require more than an immediate refueling or repair. Buses may be commandeered, if they are needed.

The Town of Burrillville's Emergency Management Agency will maintain several current lists of people who will require transportation and also those individuals with special medical needs who have registered with the RI Special Needs Emergency Registry (RISNER). Each list will identify whether this requirement is in the event of a natural, technological, or nuclear type emergency or disaster and will also identify those with medical needs that require power usage, refrigeration of medications etc.

If a nearby jurisdiction were to be affected by a major disaster, it is possible that the Town of Burrillville would be called upon to receive evacuees. In this situation, appropriate shelter for temporary lodging would be needed to accommodate the evacuees.

Jurisdictional interrelationships are a matter of great concern in an evacuation. Proper coordination among jurisdictions in an evacuation situation is critical to successful emergency operations and can be accomplished only through carefully planned and executed direction and control.

An Evacuation Planning Checklist to provide for an orderly and expeditious evacuation is included as Appendix 5 to this Annex.

B. Phases of Emergency Management

1. Mitigation

a. Identify hazards requiring evacuation planning.

b. Identify zones of risk (hazard zones) potentially in need of evacuation; i.e., flood plains, areas near hazardous materials, areas subject to hurricane damage, etc.

c. Discourage development in hazard zones, particularly schools, medical facilities, or residential development.

2. Preparedness

a. Identify population groups requiring special assistance during evacuation (i.e., senior citizens, handicapped, patients, school children, etc.).

b. Plan evacuation routes taking traffic capacities and deteriorating road conditions into account.

c. Educate the public about evacuation procedures, i.e., where residents should go and what routes they should take if a large-scale evacuation is required.

3. Response

a. Disseminate evacuation information and instructions over radio and television using Emergency Alert System (EAS) as well as the other means mentioned previously (F-2 assumptions 1).

b. Issue evacuation orders when necessary.

c. Establish traffic and perimeter control.

d. Evacuate the elderly, handicapped, and other special needs groups.

e. Designate reception areas if needed.

f. Provide police protection for evacuated areas and provide vehicle security and parking in the reception area.

g. Transportation must be provided for emergency operations for essential workers who enter or commute to the hazardous areas.

4. Recovery

a. Initiate return of the evacuees where possible.

b. Impose traffic control during re-entry of evacuated areas. Police and restrict movement in damage zone.

c. Inform the public about: places of contact for missing relatives, provision of continued emergency services, restricted areas, restoration of utilities, etc.

d. Establish Disaster Application Center (DAC), if required, in conjunction with the Federal Emergency Management Agency. Establishing the area to be utilized is the responsibility of the state emergency management agency (RIEMA) in conjunction with Burrillville EMA (BEMA). The state will also provide personnel to assist with the application process.

C. Direction and Control

1. General

   Direction and Control of evacuation operations will normally be carried on by the jurisdiction nearest to the disaster site that has sufficient scope of control to manage all required operations.

   The Town Manager of Burrillville who is also the Public Safety Director is the overall authority for the evacuation effort. All activities will be coordinated through the location serving as his direction and control center.

2. Hazardous Materials Evacuation (See Annex J - HAZMAT Title III SARA)

   Wide varieties of hazardous materials are used by industries and are carried by trucks and trains. These materials may be poisonous, flammable, or explosive. An accident with these materials may make it necessary to protect the public by evacuation. The population most likely to be affected would be those people within the vicinity of industrial and commercial sites using hazardous materials, or those within close proximity of a major transportation route (highway, rail line, pipeline, port or river) along which hazardous materials move.

   Evacuation planning is done for two types of hazardous material incidents. The first is for fixed site releases of materials from production or storage facilities. The second type involves spills or accidents during transportation.

   The Town of Burrillville ~~is~~ once only moderately vulnerable to the major transportation incident due to rural nature of the town has become more susceptible to incidents due to the increase in truck traffic utilizing town roads especially Rte. 102. The increase in traffic is in part due to trucking companies seeking alternate routes away from Rte. 146 thus avoiding traffic and delays at weigh stations

   Currently evacuation planning for transportation accidents is done at the local level. The Department of Transportation (DOT) and FEMA have published guidance on developing generalized hazardous material contingency plans for transportation. FEMA publications do not provide guidance regarding evacuation planning for this hazard.

   The U.S. Department of Transportation "Emergency Response Guidebook" recommends initial actions to be taken by emergency services personnel when they are called upon to handle incidents involving hazardous materials. An initial action is to isolate the hazard area and deny entry. Police, fire or other emergency personnel should keep everyone, not directly involved with emergency response or rescue operation, away from the hazard area. Unprotected people should not be allowed into the hazard area. All police, fire, ems and other public safety vehicles are equipped with the latest version of the Emergency Response Guides.

Unnecessary personnel should be kept away from the hazard area. Evacuation may be a necessary protective action. The tables in Appendix 2, reproduced from the "Emergency Response Guidebook", give suggested evacuation distances for selected hazardous materials. Annex J - HAZMAT Title III SARA contains detailed information relative to the Planning District containing this jurisdiction.

The extent of the evacuation would depend on the kind of toxic item involved. Officials may find it necessary to keep people away from the accident scene and to control traffic on area roads. Because gases, fumes, or smoke from hazardous materials may be carried by the wind, it may also be necessary to protect people in the downwind direction. Evacuation of downwind areas may be necessary to protect people in emergency situations involving hazardous materials.

3. Localized Evacuation

Small-scale localized evacuations could occur due to major transportation accidents, flooding, or major fires. Urban fire, the most common disaster, often necessitates the evacuation not only of the particular building in which a fire occurs, but additionally dictates the evacuation of all buildings immediately adjacent to it. (See Appendix 3). All small-scale evacuations will be coordinated through Police or Fire personnel at the site of the incident exercising on-scene control. In the event of river flooding, some low-lying areas may have to be evacuated. Flood warning will be provided in accordance with the Alerting and Warning Annex. Law enforcement personnel will be responsible for providing on-site assistance to evacuees.

The National Weather Service, River Forecast Center, Hartford, Connecticut has the responsibility of maintaining a continuous watch for the detection and forecasting of flooding in the Northeastern United States. Furthermore, it has the responsibility of issuing prompt and accurate flood warnings and river statements for the protection of life and property.

4. Nuclear Evacuation

Rhode Island is within fifty miles of several out-of-state nuclear power plants. If an evacuation is ever necessary due to a disastrous radioactive release at these facilities, the Nuclear Power Plant Incident Response (Evacuation) Plan promulgated under separate cover will be used. In a massive nuclear attack on military installations in the United States, the Town of Burrillville would experience heavy radioactive fallout requiring sheltering of the population. If an anticipated heavy nuclear attack were to include both military and civilian targets, such as the urbanized areas of Rhode Island, the urban areas would have to be evacuated in accordance with prepared emergency instructions that are crisis activated. Evacuation under nuclear threat is a pre-attack mode of protective strategy. (See Appendix 4).

5. Flood Evacuation – (See Appendix 6)

D. Continuity of Government

Continuity of Government (COG) must be maintained in an emergency evacuation situation. Essentially COG will be maintained by relocating government operations, as necessary, to alternate EOC's or to mobile EOC's with temporary transfers of authority to higher or lower emergency management organizations.

1. Should evacuees be relocated outside the Town of Burrillville, the community will appoint one or more representatives to act as liaison between the Town of Burrillville and the "host" jurisdictions. The evacuees will be subject to the laws of the host community for the duration of their stay.

2. Evacuees from other jurisdictions "hosted" in the Town of Burrillville will be subject to the laws of the "host" jurisdiction.

3. Each department according to the standard operating procedures establishes lines of succession to department heads. Lines of succession to all key positions will be clearly established, and all essential records will be protected from destruction or loss.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Task Assignments

1. Town Manager

   a. Issue evacuation (and re-entry) orders.

   b. Direct assignment of community resources (personnel and materials).

2. Emergency Manager/Civil Defense Director

   a. Advise the Town Manager of the potential hazards in the jurisdiction that could require evacuation.

   b. Develop evacuation plans in conjunction with the local emergency personnel and the Rhode Island Emergency Management Agency (RIEMA).

   c. Coordinate the evacuation effort under the direction of the Town Manager.

   d. Inform and educate the public regarding probable hazards, designated shelters, and evacuation routes.

e. Coordinate evacuation into safe neighborhoods within the Town or to other jurisdictions. Shelter in cooperation with the Red Cross.

f. Establish a Disaster Application Center (DAC), if appropriate, in conjunction with the Federal Emergency Management Agency.

3. Burrillville Police

a. Assist in evacuating the hazard zone.
b. Coordinate law enforcement activities.

c. Provide security in evacuated areas. In severe disasters, the Rhode Island National Guard may assist in patrolling evacuated areas. In some circumstances, the Police Department may utilize neighborhood "Crime watch" organizations to patrol evacuated neighborhoods.

d. Maintain law and order.

e. Assist in public information.

f. Provide Law Enforcement in Reception Centers, Lodging and Feeding Facilities and Emergency Shelters.

g. Limit access to the Incident Scene and Evacuated areas during Response and Recovery Operations.

4. Fire

a. Assist in evacuating the zone of risk.

b. Handle fire suppression and toxic materials containment (See Annex G. Radiological Protection).

c. Assist in informing the public as to the nature of the hazard and the appropriate protective measures.

5. Public Works

a. Assist in evacuation.

b. Repair and maintain utilities and roads.

6. School Systems/Mass Transit

a. Provide transportation for those without private vehicles or for special groups.

b. If required, establish reception centers and mass shelter using school buildings.

V. ADMINISTRATION AND LOGISTICS

A. Annex H, Resource Management, provides detailed information on many topics related to Administration and Logistics.

B. The Town Manager of Burrillville will control administration and logistics.

C. Normal administrative practices and procedures will be continued under emergency conditions to the extent practicable.

D. During emergency operations, every effort will be made to document each transaction sufficiently so that complete records can be reconstructed and claims properly verified after the emergency has passed.

E. To the extent consistent with law, no administrative process will be permitted to interfere with operations essential to preventing injury, loss of life, and significant property damage.

F. Legal Authority.

1. Forced Evacuation

   The authority for forced evacuation is found in the General Laws of Rhode Island, Title 30, Chapter 15.

2. Traffic and Perimeter Control

   The authority for control of egress, ingress, and movement is also found in the 1973 General Laws, Title 30, Chapter 15.

VI. PLAN DEVELOPMENT AND MAINTENANCE

The primary responsibility for the development and maintenance of this annex belongs to the State Emergency Management Agency in conjunction with the local emergency manager (Civil Defense Director). Additional support will be provided by other local officials and emergency services personnel within the jurisdiction. Guidance will be provided by the Federal Emergency Management Agency.

VII. AUTHORITIES AND REFERENCES

A. Authority

1. Federal Civil Defense Act of 1950, as amended, particularly Title V-Improved Civil Defense Program, (Public Law 96-342; September 8, 1980).

2. General Laws of Rhode Island, Title 30, Chapter 15, Rhode Island Defense Civil Preparedness Act of 1973.

B. References

1. Guide for Development of State and Local Emergency Operations Plans, FEMA, CPG 1-8, Sept. 1990

2. Evacuation: An Assessment of Planning and Research, FEMA, RR-9, November 1987

3. Emergency Response Guidebook for Hazardous Materials Incidents, U.S. Department of Transportation, 1990

4. The State of Rhode Island "Radiological Emergency Response Plan for the Ingestion Exposure Pathway", RIEMA

VIII. DEFINITIONS

A. **Attack -** A hostile action taken against the United States by foreign forces resulting in destruction of military and/or civilian targets through the use of nuclear of conventional weapons. In an attack, strategic military bases and major population centers are at a greater risk than other areas of the United States.

B. **Hazard Identification and Vulnerability Assessment (HIVA)** - A periodic study conducted by questionnaire to determine the hazards that might affect a local community, based upon experience, vulnerability and risk.

C. **Community Resources -** Assets in the jurisdiction including personnel, equipment, facilities, and funds that can be applied to all aspects of emergency management.

D. **Dam Failure -** Downstream flooding due to the partial or complete collapse of an impoundment. Dam failure is associated with intense rainfall and prolonged flood conditions. However, dam breaks may also occur during dry periods as a result of progressive erosion of an embankment caused by seepage leaks. Dam failure may also be caused by earthquake. The greatest threat from dam breaks is to areas immediately downstream.

E. **Disaster -** A sudden calamitous event that presents a threat to a community or larger area, is capable of inflicting many casualties, and can cause great damage or destruction. A disaster requires resources (personnel, equipment, facilities, and funds) beyond those available locally.

F. **Emergency -** An event that demands a crisis response beyond the scope of any single line agency or local emergency service (e.g., beyond the scope of the municipal Police Department, Fire Department, etc.). An emergency is an event that presents a threat to the jurisdiction and calls for immediate action, yet can be handled with the resources available in the municipality.

G. **Emergency Management -** The responsibility and capability for managing all types of emergencies and disasters by coordinating the actions of numerous agencies in the federal-state-local partnership. Emergency Management includes all four phases of disaster or emergency activity: mitigation, preparedness, response, and recovery. Emergency Management applies to all risks: nuclear/natural disasters and technological hazards.

H. **Emergency Operations -** Actions taken in the event of natural disasters, technological accidents, or attack to reduce casualties and minimize property damage.

I. **Emergency Public Information -** Information which is disseminated primarily in anticipation of an emergency or at the actual time of an emergency and in addition to providing information as such, frequently directs action, instructs, and transmits direct orders.

J. **Evacuation -** An orderly movement of people to a safe area in response to an actual or potential hazard. As an emergency management function, evacuation is a protective action--moving people from a place of danger to a place of relative safety. As a phenomenon, it is a temporary mass movement of people that collectively emerges in coping with community threats, damages, or disruptions.

K. **Flood -** The HIVA flood hazard includes flash floods, riverain floods, and urban floods. Flash flooding and riverain floods are brief heavy flows on small streams or in normally dry washes. Riverain flooding is defined as the periodic occurrence of over-bank flows of rivers or streams resulting in partial or complete inundation of the adjacent floodplain. Such over-bank flows are natural events and typically occur on a river once every two to three years. Riverain floods occur on river systems whose tributaries may drain large geographic areas and encompass many independent river basins. Floods on large river systems may continue for days. Urban flooding involves the overflow of storm sewer systems and is usually caused by inadequate drainage following heavy rain or rapid snowmelt. Flooding which occurs due to dam failure, storm surge, or tsunami is addressed under those hazards in the CHIP.

L. **Hazard -** A potentially dangerous event or circumstance that may cause an emergency or disaster.

M. **Hazardous Materials (HAZMAT)** - Chemicals or substances that are harmful to human health and the environment. These substances are used in industry, agriculture, medicine, research and consumer goods. They present a hazard when they are released into the environment (air, water, or ground).

N. **Hurricanes** - Severe tropical storms with high winds in a large spiral around a calm center known as the eye. Wind speeds range from 74 miles per hour to 220 miles per hour with even higher gusts. As hurricanes approach land, they create a "storm surge" along the coastline that raises water above high tide levels. Hurricanes produce heavy rains and cause river flooding as they travel inland. Hurricanes frequently result in tornadoes. The lifetimes of such storms vary between eight and twelve days. On the average, six Atlantic hurricanes

occur per year, two of which make landfall along the U.S. coast.

O. **Power Failure -** Any interruption or loss of electrical service due to disruption of power generation or transmission caused by accident, sabotage, natural hazards, equipment failure, or fuel shortage. Such interruptions typically last for periods of a few second to several days. The HICA defines a "significant" power failure as any incident that would require the involvement of the local emergency management organization to coordinate provision of food, water, heating, etc.

P. **Reception -** In providing shelter and lodging for large numbers of people, it is necessary to establish reception centers. At the reception centers evacuees are registered, assigned lodging, feeding arrangements are made, and efforts are made to consider the special needs of handicapped and elderly persons.

Q. **Response -** Those activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster.

R. **Staging Area -** Any area or facility serving as a base for evacuation operations. In multi-hazard emergency planning, a staging area provides a base for coordinated emergency operations in time of crisis.

S. **Sustenance -** Depressions, cracks, and sinkholes in the earth's surface that can threaten people and property. Subsidence depressions, which normally occur over many days to a few years, may damage structures with low strain tolerances such as dams, factories, nuclear reactors, and utility lines. The sudden collapse of the ground surface to form sinkholes (many tens of yards wide and deep within the span of a few minutes to a few hours) poses an immediate threat to life and property. Such mass-gravity movements commonly continue for days, weeks, months, or even years until the walls stabilize. The population at risk would be in areas where industrial or residential development has occurred above active or abandoned mining areas where underground cavities are present near the surface. Also at risk would be populations along groundwater aquifers in areas where an extensive amount of groundwater has been withdrawn.

T. **Terrorism -** A violent criminal activity designed to intimidate or induce fear for political purposes.

U. **Transportation Accident -** An incident involving passenger air or rail travel resulting in death or serious injury. Highway incidents are excluded from consideration under this hazard since such incidents are generally handled by emergency response services without emergency management organization involvement. Vulnerable areas include the locations of all military and civilian airports with FAA control towers or with traffic flow heavy enough to pose a hazard. Passenger rail lines are another possible hazard area.

V. **Urban Fire -** Uncontrolled burning in residential, commercial, industrial, or other urban properties in developed areas.

W. **Winter Storm (severe)** - This includes ice storms, blizzards, and extreme cold. The National Weather Service characterizes blizzards as being combinations of winds in excess of 35 mph with considerable falling or blowing snow that frequently reduces visibility to 0.25 miles or less.

IX. LIST OF APPENDICES

A. Appendix 1 - Hurricane Evacuation

B. Appendix 2 - Hazardous Materials Evacuation

C. Appendix 3 - Urban Fire Evacuation

D. Appendix 4 - Movement To Shelter-Nuclear Incident

E. Appendix 5 - Evacuation Planning Checklist

F. Appendix 6 - Flood Evacuation

G. Appendix 7 – Evacuation routes

APPENDIX 2

EMERGENCY MANAGEMENT AGENCY EOP

HAZARDOUS MATERIALS EVACUATION

In the event of the need for a hazardous materials evacuation, remove all people from area and buildings as far as recommended in the evacuation distance tables on the following pages. This table was reproduced from the Emergency Response Guidebook for Hazardous Materials Incident, U.S. Department of Transportation 2016.

GOOD JUDGEMENT MUST BE USED IN EVACUATION PROCEDURES TO AVOID PLACING PEOPLE IN GREATER DANGER.

Topographic maps may be used to assist in the planning and execution of evacuations. Indexes of the topographic maps may be obtained free of charge on request from the Eastern Distribution Branch, U.S. Geological Survey, 1200 South Fads Street, Arlington, Virginia 22202. Maps needed to cover areas of responsibility may be purchased.

Preplanning and response team training is recommended.

EVACUATION TABLES FOR HAZARDOUS MATERIALS TOWN OF BURRILLVILLE

The following tables give suggested distances for ISOLATING or EVACUATING unprotected people from spill areas involving the hazardous materials shown, if the materials are not on fire. These suggestions are only for the initial phase of an accident involving volatile hazardous liquids or gases shipped in bulk or multiple-container loads. Continuing reassessment of the situation will be necessary because there may be a change in circumstances, such as a change in wind direction. Good judgment must be used in evacuation procedures to avoid placing Burrillville residents in a more dangerous situation than is necessary.

If a hazardous material cloud goes between several multi-story buildings or down a valley, the cloud may affect people much farther away than the distance specified in the tables and the evacuation distances should be increased for the downwind direction. It is important to note that the occupants of the upper floors of multi-story buildings in the evacuation sector may be safer remaining where they are if the heating and air-handling equipment in the buildings can be shut down so that the hazardous vapors or gases will not be circulated within. A short-term spill cloud may be deflected or reflected by a multi-story building and pass by without affecting the occupants or the equipment within the building.

For those materials listed in the tables, if a fire begins to burn the spilled material the health hazard may become less important and the evacuation distances may not have to be as great as they were with no fire involvement. It is important to notice that for some of these materials the potential fragmentation hazards from a tank car or truck involved in the fire may require isolation in all directions for at least one-half mile despite any shorter distance suggested in the tables. The guide page for the respective material clearly indicates if there is a one-half mile isolation requirement to handle the fragmentation hazard. Whatever number of feet or miles has been cleared, if one or more of the materials in the following tables is affecting unprotected Burrillville residents - INCREASE THE DISTANCES and reassess the situation.

Name of Material	Guide No.	ID No.
AC	117	1051
Acetal	127	1088
Acetaldehyde	129P	1089
Acetaldehyde ammonia	171	1841
Acetaldehyde oxime	129	2332
Acetic acid, glacial	132	2789
Acetic acid, solution, more than 10% but not more than 80% acid	153	2790
Acetic acid, solution, more than 80% acid	132	2789
Acetic anhydride	137	1715
Acetone	127	1090
Acetone cyanohydrin, stabilized	155	1541
Acetone oils	127	1091
Acetonitrile	127	1648
Acetyl bromide	156	1716
Acetyl chloride	155	1717
Acetylene, dissolved	116	1001
Acetylene, Ethylene and Propylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene	115	3138
Acetylene, solvent free	116	3374
Acetylene tetrabromide	159	2504
Acetyl iodide	156	1898
Acetyl methyl carbinol	127	2621
Acid, sludge	153	1906
Acid butyl phosphate	153	1718
Acridine	153	2713
Acrolein, stabilized	131P	1092
Acrolein dimer, stabilized	129P	2607
Acrylamide	153P	2074
Acrylamide, solid	153P	2074
Acrylamide, solution	153P	3426
Acrylic acid, stabilized	132P	2218
Acrylonitrile, stabilized	131P	1093
Adamsite	154	1698
Adhesives (flammable)	128	1133
Adiponitrile	153	2205
Adsorbed gas, flammable, n.o.s.	174	3510
Adsorbed gas, n.o.s.	174	3511
Adsorbed gas, oxidizing, n.o.s.	174	3513
Adsorbed gas, poisonous, corrosive, n.o.s.	173	3516
Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone A)	173	3516
Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone B)	173	3516
Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone C)	173	3516
Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone D)	173	3516
Adsorbed gas, poisonous, flammable, corrosive, n.o.s.	173	3517
Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone A)	173	3517
Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone B)	173	3517
Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone C)	173	3517

Name of Material	Guide No.	ID No.
Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone D)	173	3517
Adsorbed gas, poisonous, flammable, n.o.s.	173	3514
Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone A)	173	3514
Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone B)	173	3514
Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone C)	173	3514
Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone D)	173	3514
Adsorbed gas, poisonous, n.o.s.	173	3512
Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone A)	173	3512
Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone B)	173	3512
Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone C)	173	3512
Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone D)	173	3512
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Adsorbed gas, poisonous, oxidizing, n.o.s. (Inhalation hazard zone D)	173	3515
Adsorbed gas, toxic, corrosive, n.o.s.	173	3516
Adsorbed gas, toxic, corrosive, n.o.s. (Inhalation hazard zone A)	173	3516
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Adsorbed gas, toxic, corrosive, n.o.s. (Inhalation hazard zone C)	173	3516
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Carbon tetrabromide	151	2516
Carbon tetrachloride	151	1846
Carbonyl fluoride	125	2417
Carbonyl fluoride, compressed	125	2417
Carbonyl sulfide	119	2204
Carbonyl sulphide	119	2204
Castor beans, meal, pomace or flake	171	2969
Caustic alkali liquid, n.o.s.	154	1719
Caustic potash, solid	154	1813
Caustic potash, solution	154	1814
Caustic soda, solid	154	1823
Caustic soda, solution	154	1824
Cells, containing Sodium	138	3292
Celluloid, in blocks, rods, rolls, sheets, tubes, etc., except scrap	133	2000
Celluloid, scrap	135	2002
Cerium, slabs, ingots or rods	170	1333
Cerium, turnings or gritty powder	138	3078
Cesium	138	1407
Cesium hydroxide	157	2682
Cesium hydroxide, solution	154	2681
Cesium nitrate	140	1451
CG	125	1076
Charcoal	133	1361
Chemical kit	154	1760
Chemical kit	171	3316
Chemical sample, poisonous	151	3315
Chemical sample, toxic	151	3315
Chemical under pressure, corrosive, n.o.s.	125	3503
Chemical under pressure, flammable, corrosive, n.o.s.	118	3505
Chemical under pressure, flammable, n.o.s.	115	3501
Chemical under pressure, flammable, poisonous, n.o.s.	119	3504
Chemical under pressure, flammable, toxic, n.o.s.	119	3504
Chemical under pressure, n.o.s.	126	3500
Chemical under pressure, poisonous, n.o.s.	123	3502
Chemical under pressure, toxic, n.o.s.	123	3502
Chloral, anhydrous, stabilized	153	2075
Chlorate and Borate mixture	140	1458
Chlorate and Magnesium chloride mixture	140	1459
Chlorate and Magnesium chloride mixture, solid	140	1459
Chlorate and Magnesium chloride mixture, solution	140	3407
Chlorates, inorganic, aqueous solution, n.o.s.	140	3210
Chlorates, inorganic, n.o.s.	140	1461
Chloric acid, aqueous solution, with not more than 10% Chloric acid	140	2626
Chlorine	124	1017
Chlorine, adsorbed	173	3520
Chlorine dioxide, hydrate, frozen	143	9191

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Chlorine pentafluoride	124	2548
Chlorine trifluoride	124	1749
Chlorite solution	154	1908
Chlorites, inorganic, n.o.s.	143	1462
Chloroacetaldehyde	153	2232
Chloroacetic acid, molten	153	3250
Chloroacetic acid, solid	153	1751
Chloroacetic acid, solution	153	1750
Chloroacetone, stabilized	131	1695
Chloroacetonitrile	131	2668
Chloroacetophenone	153	1697
Chloroacetophenone, liquid	153	3416
Chloroacetophenone, solid	153	1697
Chloroacetyl chloride	156	1752
Chloroanilines, liquid	152	2019
Chloroanilines, solid	152	2018
Chloroanisidines	152	2233
Chlorobenzene	130	1134
Chlorobenzotrifluorides	130	2234
Chlorobenzyl chlorides	153	2235
Chlorobenzyl chlorides, liquid	153	2235
Chlorobenzyl chlorides, solid	153	3427
Chlorobutanes	130	1127
Chlorocresols	152	2669
Chlorocresols, solid	152	3437
Chlorocresols, solution	152	2669
Chlorodifluorobromomethane	126	1974
1-Chloro-1,1-difluoroethane	115	2517
Chlorodifluoromethane	126	1018
Chlorodifluoromethane and Chloropentafluoroethane mixture	126	1973
Chlorodinitrobenzenes, liquid	153	1577
Chlorodinitrobenzenes, solid	153	1577
Chlorodinitrobenzenes, solid	153	3441
1-Chloro-2,3-epoxypropane	131P	2023
2-Chloroethanal	153	2232
Chloroform	151	1888
Chloroformates, poisonous, corrosive, flammable, n.o.s.	155	2742
Chloroformates, poisonous, corrosive, n.o.s.	154	3277
Chloroformates, toxic, corrosive, flammable, n.o.s.	155	2742
Chloroformates, toxic, corrosive, n.o.s.	154	3277
Chloromethyl chloroformate	157	2745
Chloromethyl ethyl ether	131	2354
3-Chloro-4-methylphenyl isocyanate	156	2236
3-Chloro-4-methylphenyl isocyanate, liquid	156	2236
3-Chloro-4-methylphenyl isocyanate, solid	156	3428
Chloronitroanilines	153	2237
Chloronitrobenzenes	152	1578
Chloronitrobenzenes, liquid	152	3409
Chloronitrobenzenes, solid	152	1578
Chloronitrotoluenes, liquid	152	2433
Chloronitrotoluenes, solid	152	2433
Chloronitrotoluenes, solid	152	3457
Chloropentafluoroethane	126	1020
Chloropentafluoroethane and Chlorodifluoromethane mixture	126	1973
Chlorophenolates, liquid	154	2904
Chlorophenolates, solid	154	2905
Chlorophenols, liquid	153	2021
Chlorophenols, solid	153	2020

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Chlorophenyltrichlorosilane	156	1753
Chloropicrin	154	1580
Chloropicrin and Methyl bromide mixture	123	1581
Chloropicrin and Methyl chloride mixture	119	1582
Chloropicrin mixture, n.o.s.	154	1583
Chloropivaloyl chloride	156	9263
Chloroplatinic acid, solid	154	2507
Chloroprene, stabilized	131P	1991
1-Chloropropane	129	1278
2-Chloropropane	129	2356
3-Chloropropanol-1	153	2849
2-Chloropropene	130P	2456
2-Chloropropionic acid	153	2511
2-Chloropropionic acid, solid	153	2511
2-Chloropropionic acid, solution	153	2511
2-Chloropyridine	153	2822
Chlorosilanes, corrosive, flammable, n.o.s.	155	2986
Chlorosilanes, corrosive, n.o.s.	156	2987
Chlorosilanes, flammable, corrosive, n.o.s.	155	2985
Chlorosilanes, poisonous, corrosive, flammable, n.o.s.	155	3362
Chlorosilanes, poisonous, corrosive, n.o.s.	156	3361
Chlorosilanes, toxic, corrosive, flammable, n.o.s.	155	3362
Chlorosilanes, toxic, corrosive, n.o.s.	156	3361
Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	139	2988
Chlorosulfonic acid (with or without sulfur trioxide mixture)	137	1754
Chlorosulphonic acid (with or without sulphur trioxide mixture)	137	1754
1-Chloro-1,2,2,2-tetrafluoroethane	126	1021
Chlorotetrafluoroethane and Ethylene oxide mixture, with not more than 8.8% Ethylene oxide	126	3297
Chlorotoluenes	129	2238
4-Chloro-o-toluidine hydrochloride	153	1579
4-Chloro-o-toluidine hydrochloride, solid	153	1579
4-Chloro-o-toluidine hydrochloride, solution	153	3410
Chlorotoluidines	153	2239
Chlorotoluidines, liquid	153	3429
Chlorotoluidines, solid	153	2239
1-Chloro-2,2,2-trifluoroethane	126	1983
Chlorotrifluoromethane	126	1022
Chlorotrifluoromethane and Trifluoromethane azeotropic mixture with approximately 60% Chlorotrifluoromethane	126	2599
Chromic acid, solution	154	1755
Chromic fluoride, solid	154	1756
Chromic fluoride, solution	154	1757
Chromium nitrate	141	2720
Chromium oxychloride	137	1758
Chromium trioxide, anhydrous	141	1463
Chromosulfuric acid	154	2240
Chromosulphuric acid	154	2240
CK	125	1589

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Clinical waste, unspecified, n.o.s.	158	3291
CN	153	1697
CN	153	3416
Coal gas	119	1023
Coal gas, compressed	119	1023
Coal tar distillates, flammable	128	1136
Coating solution	127	1139
Cobalt naphthenates, powder	133	2001
Cobalt resinate, precipitated	133	1318
Combustible liquid, n.o.s.	128	1993
Compounds, cleaning liquid (corrosive)	154	1760
Compounds, cleaning liquid (flammable)	128	1993
Compounds, tree or weed killing, liquid (corrosive)	154	1760
Compounds, tree or weed killing, liquid (flammable)	128	1993
Compounds, tree or weed killing, liquid (toxic)	153	2810
Compressed gas, flammable, n.o.s.	115	1954
Compressed gas, n.o.s.	126	1956
Compressed gas, oxidizing, n.o.s.	122	3156
Compressed gas, poisonous, corrosive, n.o.s.	123	3304
Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A)	123	3304
Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B)	123	3304
Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C)	123	3304
Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D)	123	3304
Compressed gas, poisonous, flammable, corrosive, n.o.s.	119	3305
Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	119	3305
Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	119	3305
Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C)	119	3305
Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D)	119	3305
Compressed gas, poisonous, flammable, n.o.s.	119	1953
Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A)	119	1953
Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B)	119	1953
Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C)	119	1953
Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D)	119	1953
Compressed gas, poisonous, n.o.s.	123	1955
Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone A)	123	1955
Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone B)	123	1955
Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone C)	123	1955

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Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone D)	123	1955
Compressed gas, poisonous, oxidizing, corrosive, n.o.s.	124	3306
Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A)	124	3306
Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B)	124	3306
Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C)	124	3306
Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D)	124	3306
Compressed gas, poisonous, oxidizing, n.o.s.	124	3303
Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A)	124	3303
Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B)	124	3303
Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C)	124	3303
Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D)	124	3303
Compressed gas, toxic, corrosive, n.o.s.	123	3304
Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A)	123	3304
Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B)	123	3304
Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C)	123	3304
Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D)	123	3304
Compressed gas, toxic, flammable, corrosive, n.o.s.	119	3305
Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	119	3305
Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	119	3305
Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C)	119	3305
Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D)	119	3305
Compressed gas, toxic, flammable, n.o.s.	119	1953
Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A)	119	1953
Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B)	119	1953
Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C)	119	1953
Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D)	119	1953
Compressed gas, toxic, n.o.s.	123	1955
Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone A)	123	1955
Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone B)	123	1955
Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone C)	123	1955
Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone D)	123	1955
Compressed gas, toxic, oxidizing, corrosive, n.o.s.	124	3306

Name of Material	Guide No.	ID No.
Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A)	124	3306
Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B)	124	3306
Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C)	124	3306
Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D)	124	3306
Compressed gas, toxic, oxidizing, n.o.s.	124	3303
Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A)	124	3303
Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B)	124	3303
Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C)	124	3303
Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D)	124	3303
Compressed gas and hexaethyl tetraphosphate mixture	123	1612
Consumer commodity	171	8000
Copper acetoarsenite	151	1585
Copper arsenite	151	1586
Copper based pesticide, liquid, flammable, poisonous	131	2776
Copper based pesticide, liquid, flammable, toxic	131	2776
Copper based pesticide, liquid, poisonous	151	3010
Copper based pesticide, liquid, poisonous, flammable	131	3009
Copper based pesticide, liquid, toxic	151	3010
Copper based pesticide, liquid, toxic, flammable	131	3009
Copper based pesticide, solid, poisonous	151	2775
Copper based pesticide, solid, toxic	151	2775
Copper chlorate	141	2721
Copper chloride	154	2802
Copper cyanide	151	1587
Copra	135	1363
Corrosive liquid, acidic, inorganic, n.o.s.	154	3264
Corrosive liquid, acidic, organic, n.o.s.	153	3265
Corrosive liquid, basic, inorganic, n.o.s.	154	3266
Corrosive liquid, basic, organic, n.o.s.	153	3267
Corrosive liquid, flammable, n.o.s.	132	2920
Corrosive liquid, n.o.s.	154	1760
Corrosive liquid, oxidizing, n.o.s.	140	3093
Corrosive liquid, poisonous, n.o.s.	154	2922
Corrosive liquid, self-heating, n.o.s.	136	3301
Corrosive liquid, toxic, n.o.s.	154	2922
Corrosive liquid, water-reactive, n.o.s.	138	3094
Corrosive solid, acidic, inorganic, n.o.s.	154	3260
Corrosive solid, acidic, organic, n.o.s.	154	3261
Corrosive solid, basic, inorganic, n.o.s.	154	3262

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Corrosive solid, basic, organic, n.o.s.	154	3263
Corrosive solid, flammable, n.o.s.	134	2921
Corrosive solid, n.o.s.	154	1759
Corrosive solid, oxidizing, n.o.s.	140	3084
Corrosive solid, poisonous, n.o.s.	154	2923
Corrosive solid, self-heating, n.o.s.	136	3095
Corrosive solid, toxic, n.o.s.	154	2923
Corrosive solid, water-reactive, n.o.s.	138	3096
Cotton	133	1365
Cotton, wet	133	1365
Cotton waste, oily	133	1364
Coumarin derivative pesticide, liquid, flammable, poisonous	131	3024
Coumarin derivative pesticide, liquid, flammable, toxic	131	3024
Coumarin derivative pesticide, liquid, poisonous	151	3026
Coumarin derivative pesticide, liquid, poisonous, flammable	131	3025
Coumarin derivative pesticide, liquid, toxic	151	3026
Coumarin derivative pesticide, liquid, toxic, flammable	131	3025
Coumarin derivative pesticide, solid, poisonous	151	3027
Coumarin derivative pesticide, solid, toxic	151	3027
Cresols, liquid	153	2076
Cresols, solid	153	2076
Cresols, solid	153	3455
Cresylic acid	153	2022
Crotonaldehyde	131P	1143
Crotonaldehyde, stabilized	131P	1143
Crotonic acid	153	2823
Crotonic acid, liquid	153	2823
Crotonic acid, liquid	153	3472
Crotonic acid, solid	153	2823
Crotonylene	128	1144
CS	153	2810
Cumene	130	1918
Cupriethylenediamine, solution	154	1761
CX	154	2811
Cyanide solution, n.o.s.	157	1935
Cyanides, inorganic, solid, n.o.s.	157	1588
Cyanogen	119	1026
Cyanogen bromide	157	1889
Cyanogen chloride, stabilized	125	1589
Cyanuric chloride	157	2670
Cyclobutane	115	2601
Cyclobutyl chloroformate	155	2744
1,5,9-Cyclododecatriene	153	2518
Cycloheptane	128	2241
Cycloheptatriene	131	2603
Cycloheptene	128	2242
Cyclohexane	128	1145
Cyclohexanethiol	129	3054
Cyclohexanone	127	1915
Cyclohexene	130	2256
Cyclohexenyltrichlorosilane	156	1762
Cyclohexyl acetate	130	2243
Cyclohexylamine	132	2357

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Cyclohexyl isocyanate	155	2488
Cyclohexyl mercaptan	129	3054
Cyclohexyltrichlorosilane	156	1763
Cyclooctadiene phosphines	135	2940
Cyclooctadienes	130P	2520
Cyclooctatetraene	128P	2358
Cyclopentane	128	1146
Cyclopentanol	129	2244
Cyclopentanone	128	2245
Cyclopentene	128	2246
Cyclopropane	115	1027
Cymenes	130	2046
DA	151	1699
Dangerous goods in apparatus	171	3363
Dangerous goods in machinery	171	3363
DC	153	2810
Decaborane	134	1868
Decahydronaphthalene	130	1147
n-Decane	128	2247
Denatured alcohol	127	1987
Desensitized explosive, liquid, n.o.s.	128	3379
Desensitized explosive, solid, n.o.s.	133	3380
Deuterium	115	1957
Deuterium, compressed	115	1957
Devices, small, hydrocarbon gas powered, with release device	115	3150
Diacetone alcohol	129	1148
Diacetyl	127	2346
Diallylamine	132	2359
Diallyl ether	131P	2360
4,4'-Diaminodiphenylmethane	153	2651
Di-n-amylamine	131	2841
Dibenzyldichlorosilane	156	2434
Diborane	119	1911
Diborane, compressed	119	1911
Diborane mixtures	119	1911
1,2-Dibromobutan-3-one	154	2648
Dibromochloropropanes	159	2872
Dibromodifluoromethane	171	1941
Dibromomethane	160	2664
Di-n-butylamine	132	2248
Dibutylaminoethanol	153	2873
Dibutyl ethers	128	1149
Dichloroacetic acid	153	1764
1,3-Dichloroacetone	153	2649
Dichloroacetyl chloride	156	1765
Dichloroanilines, liquid	153	1590
Dichloroanilines, solid	153	1590
Dichloroanilines, solid	153	3442
o-Dichlorobenzene	152	1591
2,2'-Dichlorodiethyl ether	152	1916
Dichlorodifluoromethane	126	1028
Dichlorodifluoromethane and Difluoroethane azeotropic mixture with approximately 74% Dichlorodifluoromethane	126	2602
Dichlorodifluoromethane and Ethylene oxide mixture, with not more than 12.5% Ethylene oxide	126	3070
Dichlorodimethyl ether, symmetrical	131	2249
1,1-Dichloroethane	130	2362
1,2-Dichloroethylene	130P	1150
Dichloroethyl ether	152	1916

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Dichlorofluoromethane	126	1029
Dichloroisocyanuric acid, dry	140	2465
Dichloroisocyanuric acid salts	140	2465
Dichloroisopropyl ether	153	2490
Dichloromethane	160	1593
1,1-Dichloro-1-nitroethane	153	2650
Dichloropentanes	130	1152
Dichlorophenyl isocyanates	156	2250
Dichlorophenyltrichlorosilane	156	1766
1,2-Dichloropropane	130	1279
1,3-Dichloropropanol-2	153	2750
Dichloropropenes	129	2047
Dichlorosilane	119	2189
1,2-Dichloro-1,1,2,2-tetrafluoroethane	126	1958
3,5-Dichloro-2,4,6-trifluoropyridine	151	9264
Dicyclohexylamine	153	2565
Dicyclohexylammonium nitrite	133	2687
Dicyclopentadiene	130	2048
1,2-Di-(dimethylamino)ethane	129	2372
Didymium nitrate	140	1465
Diesel fuel	128	1202
Diesel fuel	128	1993
Diethoxymethane	127	2373
3,3-Diethoxypropene	127	2374
Diethylamine	132	1154
2-Diethylaminoethanol	132	2686
3-Diethylaminopropylamine	132	2684
Diethylaminopropylamine	132	2684
N,N-Diethylaniline	153	2432
Diethylbenzene	130	2049
Diethyl carbonate	128	2366
Diethyldichlorosilane	155	1767
Diethylenetriamine	154	2079
Diethyl ether	127	1155
N,N-Diethylethylenediamine	132	2685
Diethyl ketone	127	1156
Diethyl sulfate	152	1594
Diethyl sulfide	129	2375
Diethyl sulphate	152	1594
Diethyl sulphide	129	2375
Diethylthiophosphoryl chloride	155	2751
Diethylzinc	135	1366
Difluorochloroethanes	115	2517
1,1-Difluoroethane	115	1030
Difluoroethane and Dichlorodifluoromethane azeotropic mixture with approximately 74% Dichlorodifluoromethane	126	2602
1,1-Difluoroethylene	116P	1959
Difluoromethane	115	3252
Difluorophosphoric acid, anhydrous	154	1768
2,3-Dihydropyran	127	2376
Diisobutylamine	132	2361
Diisobutylene, isomeric compounds	128	2050
Diisobutyl ketone	128	1157
Diisooctyl acid phosphate	153	1902
Diisopropylamine	132	1158
Diisopropyl ether	127	1159
Diketene, stabilized	131P	2521
1,1-Dimethoxyethane	127	2377
1,2-Dimethoxyethane	127	2252
Dimethylamine, anhydrous	118	1032

Name of Material	Guide No.	ID No.
Dimethylamine, aqueous solution	132	1160
Dimethylamine, solution	132	1160
2-Dimethylaminoacetonitrile	131	2378
2-Dimethylaminoethanol	132	2051
2-Dimethylaminoethyl acrylate	152	3302
2-Dimethylaminoethyl methacrylate	153P	2522
N,N-Dimethylaniline	153	2253
2,3-Dimethylbutane	128	2457
1,3-Dimethylbutylamine	132	2379
Dimethylcarbamoyl chloride	156	2262
Dimethyl carbonate	129	1161
Dimethylcyclohexanes	128	2263
N,N-Dimethylcyclohexylamine	132	2264
Dimethylcyclohexylamine	132	2264
Dimethyldichlorosilane	155	1162
Dimethyldiethoxysilane	127	2380
Dimethyldioxanes	127	2707
Dimethyl disulfide	130	2381
Dimethyl disulphide	130	2381
Dimethyl ether	115	1033
N,N-Dimethylformamide	129	2265
1,1-Dimethylhydrazine	131	1163
Dimethylhydrazine, symmetrical	131	2382
Dimethylhydrazine, unsymmetrical	131	1163
2,2-Dimethylpropane	115	2044
Dimethyl-N-propylamine	132	2266
Dimethyl sulfate	156	1595
Dimethyl sulfide	130	1164
Dimethyl sulphate	156	1595
Dimethyl sulphide	130	1164
Dimethyl thiophosphoryl chloride	156	2267
Dimethylzinc	135	1370
Dinitroanilines	153	1596
Dinitrobenzenes, liquid	152	1597
Dinitrobenzenes, solid	152	1597
Dinitrobenzenes, solid	152	3443
Dinitrochlorobenzenes	153	1577
Dinitro-o-cresol	153	1598
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Isocyanate solution, poisonous, flammable, n.o.s.	155	3080
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Isocyanate solution, toxic, flammable, n.o.s.	155	3080
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Isopropyl isobutyrate	127	2406
Isopropyl isocyanate	155	2483
Isopropyl nitrate	130	1222
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Nitropropanes	129	2608
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Nitrosyl chloride	125	1069
Nitrosylsulfuric acid, liquid	157	2308
Nitrosylsulfuric acid, solid	157	2308
Nitrosylsulfuric acid, solid	157	3456
Nitrosylsulphuric acid, liquid	157	2308
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Organic phosphate mixed with compressed gas	123	1955
Organic phosphorus compound mixed with compressed gas	123	1955
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Organochlorine pesticide, liquid, flammable, toxic	131	2762
Organochlorine pesticide, liquid, poisonous	151	2996
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Organochlorine pesticide, liquid, toxic	151	2996
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Organometallic compound, poisonous, liquid, n.o.s.	151	3282
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Organometallic compound, solid, poisonous, n.o.s.	151	3467
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Organophosphorus compound, poisonous, liquid, n.o.s.	151	3278
Organophosphorus compound, poisonous, n.o.s.	151	3278
Organophosphorus compound, poisonous, solid, n.o.s.	151	3464
Organophosphorus compound, solid, poisonous, n.o.s.	151	3464
Organophosphorus compound, solid, toxic, n.o.s.	151	3464
Organophosphorus compound, toxic, flammable, n.o.s.	131	3279
Organophosphorus compound, toxic, liquid, n.o.s.	151	3278
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Organophosphorus pesticide, liquid, poisonous	152	3018
Organophosphorus pesticide, liquid, poisonous, flammable	131	3017
Organophosphorus pesticide, liquid, toxic	152	3018
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Organotin pesticide, liquid, flammable, toxic	131	2787
Organotin pesticide, liquid, poisonous	153	3020
Organotin pesticide, liquid, poisonous, flammable	131	3019
Organotin pesticide, liquid, toxic	153	3020
Organotin pesticide, liquid, toxic, flammable	131	3019
Organotin pesticide, solid, poisonous	153	2786
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Oxidizing liquid, poisonous, n.o.s.	142	3099
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Oxidizing solid, corrosive, n.o.s.	140	3085
Oxidizing solid, flammable, n.o.s.	140	3137
Oxidizing solid, n.o.s.	140	1479
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Pentaerythrite tetranitrate mixture, desensitized, solid, n.o.s., with more than 10% but not more than 20% PETN	113	3344
Pentaerythritol tetranitrate mixture, desensitized, solid, n.o.s., with more than 10% but not more than 20% PETN	113	3344
Pentafluoroethane	126	3220
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Pentamethylheptane	128	2286
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Pentanes	128	1265
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Perchlorates, inorganic, n.o.s.	140	1481
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Perchloric acid, with not more than 50% acid	140	1802
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Perfluoro(methyl vinyl ether)	115	3153
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Pesticide, liquid, flammable, poisonous, n.o.s.	131	3021
Pesticide, liquid, flammable, toxic, n.o.s.	131	3021
Pesticide, liquid, poisonous, flammable, n.o.s.	131	2903
Pesticide, liquid, poisonous, n.o.s.	151	2902
Pesticide, liquid, toxic, flammable, n.o.s.	131	2903
Pesticide, liquid, toxic, n.o.s.	151	2902
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Phenacyl bromide	153	2645
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Phenolates, solid	154	2905
Phenolsulfonic acid, liquid	153	1803
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Phenoxyacetic acid derivative pesticide, liquid, flammable, poisonous	131	3346
Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic	131	3346
Phenoxyacetic acid derivative pesticide, liquid, poisonous	153	3348
Phenoxyacetic acid derivative pesticide, liquid, poisonous, flammable	131	3347
Phenoxyacetic acid derivative pesticide, liquid, toxic	153	3348
Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable	131	3347
Phenoxyacetic acid derivative pesticide, solid, poisonous	153	3345
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Phenylenediamines	153	1673
Phenylhydrazine	153	2572
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Phosphoric acid, solid	154	3453
Phosphoric acid, solution	154	1805
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Phosphorus heptasulfide, free from yellow and white Phosphorus	139	1339
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Phosphorus oxybromide	137	1939
Phosphorus oxybromide, molten	137	2576
Phosphorus oxybromide, solid	137	1939
Phosphorus oxychloride	137	1810
Phosphorus pentabromide	137	2691
Phosphorus pentachloride	137	1806
Phosphorus pentafluoride	125	2198
Phosphorus pentafluoride, adsorbed	173	3524
Phosphorus pentafluoride, compressed	125	2198
Phosphorus pentasulfide, free from yellow and white Phosphorus	139	1340
Phosphorus pentasulphide, free from yellow and white Phosphorus	139	1340
Phosphorus pentoxide	137	1807
Phosphorus sesquisulfide, free from yellow and white Phosphorus	139	1341
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Phosphorus tribromide	137	1808
Phosphorus trichloride	137	1809
Phosphorus trioxide	157	2578
Phosphorus trisulfide, free from yellow and white Phosphorus	139	1343
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Picric acid, wetted with not less than 10% water	113	3364
Picric acid, wetted with not less than 30% water	113	1344
Picrite, wetted with not less than 20% water	113	1336
Picryl chloride, wetted with not less than 10% water	113	3365
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Pine oil	129	1272
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Plastics moulding compound	171	3314
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Poisonous by inhalation liquid, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	131	3489
Poisonous by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone A)	131	3383
Poisonous by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone B)	131	3384
Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone A)	151	3381
Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone B)	151	3382
Poisonous by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A)	142	3387
Poisonous by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B)	142	3388
Poisonous by inhalation liquid, water-reactive, flammable, n.o.s. (Inhalation Hazard Zone A)	155	3490
Poisonous by inhalation liquid, water-reactive, flammable, n.o.s. (Inhalation Hazard Zone B)	155	3491
Poisonous by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A)	139	3385
Poisonous by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B)	139	3386
Poisonous liquid, corrosive, inorganic, n.o.s.	154	3289
Poisonous liquid, corrosive, organic, n.o.s.	154	2927
Poisonous liquid, flammable, organic, n.o.s.	131	2929
Poisonous liquid, inorganic, n.o.s.	151	3287
Poisonous liquid, organic, n.o.s.	153	2810
Poisonous liquid, oxidizing, n.o.s.	142	3122
Poisonous liquid, water-reactive, n.o.s.	139	3123
Poisonous solid, corrosive, inorganic, n.o.s.	154	3290
Poisonous solid, corrosive, organic, n.o.s.	154	2928
Poisonous solid, flammable, organic, n.o.s.	134	2930
Poisonous solid, inorganic, n.o.s.	151	3288
Poisonous solid, organic, n.o.s.	154	2811
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Poisonous solid, self-heating, n.o.s.	136	3124
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Polyalkylamines, n.o.s.	132	2734
Polyalkylamines, n.o.s.	153	2735
Polyamines, flammable, corrosive, n.o.s.	132	2733
Polyamines, liquid, corrosive, flammable, n.o.s.	132	2734
Polyamines, liquid, corrosive, n.o.s.	153	2735
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Polyhalogenated biphenyls, liquid	171	3151
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Polyhalogenated terphenyls, liquid	171	3151
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Polymerizing substance, liquid, temperature controlled, n.o.s.	150P	3534
Polymerizing substance, solid, stabilized, n.o.s.	149P	3531
Polymerizing substance, solid, temperature controlled, n.o.s.	150P	3533
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Potassium, metal alloys, liquid	138	1420
Potassium, metal alloys, solid	138	3403
Potassium arsenate	151	1677
Potassium arsenite	154	1678
Potassium borohydride	138	1870
Potassium bromate	140	1484
Potassium chlorate	140	1485
Potassium chlorate, aqueous solution	140	2427
Potassium cuprocyanide	157	1679
Potassium cyanide	157	1680
Potassium cyanide, solid	157	1680
Potassium cyanide, solution	157	3413
Potassium dithionite	135	1929
Potassium fluoride	154	1812
Potassium fluoride, solid	154	1812
Potassium fluoride, solution	154	3422
Potassium fluoroacetate	151	2628
Potassium fluorosilicate	151	2655
Potassium hydrogendifluoride	154	1811
Potassium hydrogen difluoride, solid	154	1811
Potassium hydrogen difluoride, solution	154	3421
Potassium hydrogen sulfate	154	2509
Potassium hydrogen sulphate	154	2509
Potassium hydrosulfite	135	1929
Potassium hydrosulphite	135	1929
Potassium hydroxide, solid	154	1813
Potassium hydroxide, solution	154	1814
Potassium metavanadate	151	2864
Potassium monoxide	154	2033
Potassium nitrate	140	1486
Potassium nitrate and Sodium nitrate mixture	140	1499
Potassium nitrate and Sodium nitrite mixture	140	1487
Potassium nitrite	140	1488
Potassium perchlorate	140	1489
Potassium permanganate	140	1490
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Potassium sulfide, anhydrous	135	1382
Potassium sulfide, hydrated, with not less than 30% water of crystallization	153	1847
Potassium sulfide, with less than 30% water of crystallization	135	1382
Potassium sulphide, anhydrous	135	1382
Potassium sulphide, hydrated, with not less than 30% water of crystallization	153	1847
Potassium sulphide, with less than 30% water of crystallization	135	1382
Potassium superoxide	143	2466
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Propadiene and Methylacetylene mixture, stabilized	116P	1060
Propane	115	1075
Propane	115	1978
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Propanethiols	130	2402
n-Propanol	129	1274
Propionaldehyde	129	1275
Propionic acid	132	1848
Propionic acid, with not less than 10% and less than 90% acid	132	1848
Propionic acid, with not less than 90% acid	132	3463
Propionic anhydride	156	2496
Propionitrile	131	2404
Propionyl chloride	132	1815
n-Propyl acetate	129	1276
Propyl alcohol, normal	129	1274
Propylamine	132	1277
n-Propyl benzene	128	2364
Propyl chloride	129	1278
n-Propyl chloroformate	155	2740
Propylene	115	1075
Propylene	115	1077
Propylene, Ethylene and Acetylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene	115	3138
Propylene chlorohydrin	131	2611
1,2-Propylenediamine	132	2258
Propyleneimine, stabilized	131P	1921
Propylene oxide	127P	1280
Propylene oxide and Ethylene oxide mixture, with not more than 30% Ethylene oxide	129P	2983
Propylene tetramer	128	2850
Propyl formates	129	1281
n-Propyl isocyanate	155	2482
n-Propyl nitrate	131	1865
Propyltrichlorosilane	155	1816

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Pyrethroid pesticide, liquid, flammable, poisonous	131	3350
Pyrethroid pesticide, liquid, flammable, toxic	131	3350
Pyrethroid pesticide, liquid, poisonous	151	3352
Pyrethroid pesticide, liquid, poisonous, flammable	131	3351
Pyrethroid pesticide, liquid, toxic	151	3352
Pyrethroid pesticide, liquid, toxic, flammable	131	3351
Pyrethroid pesticide, solid, poisonous	151	3349
Pyrethroid pesticide, solid, toxic	151	3349
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Pyrophoric alloy, n.o.s.	135	1383
Pyrophoric liquid, inorganic, n.o.s.	135	3194
Pyrophoric liquid, organic, n.o.s.	135	2845
Pyrophoric metal, n.o.s.	135	1383
Pyrophoric organometallic compound, water-reactive, n.o.s.	135	3203
Pyrophoric solid, inorganic, n.o.s.	135	3200
Pyrophoric solid, organic, n.o.s.	135	2846
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Pyrosulphuryl chloride	137	1817
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Triazine pesticide, liquid, toxic	151	2998
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Trinitrophenol, wetted with not less than 30% water	113	1344
Trinitrotoluene, wetted with not less than 10% water	113	3366
Trinitrotoluene, wetted with not less than 30% water	113	1356
Tripropylamine	132	2260
Tripropylene	128	2057
Tris-(1-aziridinyl)phosphine oxide, solution	152	2501
Tungsten hexafluoride	125	2196
Turpentine	128	1299
Turpentine substitute	128	1300
Undecane	128	2330
Uranium hexafluoride, radioactive material, excepted package, less than 0.1 kg per package, non-fissile or fissile-excepted	166	3507
Uranium hexafluoride, radioactive material, fissile	166	2977
Uranium hexafluoride, radioactive material, non fissile or fissile-excepted	166	2978
Urea hydrogen peroxide	140	1511
Urea nitrate, wetted with not less than 10% water	113	3370

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Name of Material	Guide No.	ID No.
Urea nitrate, wetted with not less than 20% water	113	1357
Valeraldehyde	129	2058
Valeryl chloride	132	2502
Vanadium compound, n.o.s.	151	3285
Vanadium oxytrichloride	137	2443
Vanadium pentoxide	151	2862
Vanadium tetrachloride	137	2444
Vanadium trichloride	157	2475
Vanadyl sulfate	151	2931
Vanadyl sulphate	151	2931
Vehicle, flammable gas powered	115	3166
Vehicle, flammable liquid powered	128	3166
Vehicle, fuel cell, flammable gas powered	115	3166
Vehicle, fuel cell, flammable liquid powered	128	3166
Vinyl acetate, stabilized	129P	1301
Vinyl bromide, stabilized	116P	1085
Vinyl butyrate, stabilized	129P	2838
Vinyl chloride, stabilized	116P	1086
Vinyl chloroacetate	155	2589
Vinyl ethyl ether, stabilized	127P	1302
Vinyl fluoride, stabilized	116P	1860
Vinylidene chloride, stabilized	130P	1303
Vinyl isobutyl ether, stabilized	127P	1304
Vinyl methyl ether, stabilized	116P	1087
Vinylpyridines, stabilized	131P	3073
Vinyltoluenes, stabilized	130P	2618
Vinyltrichlorosilane	155P	1305
Vinyltrichlorosilane, stabilized	155P	1305
VX	153	2810
Water-reactive liquid, corrosive, n.o.s.	138	3129
Water-reactive liquid, n.o.s.	138	3148
Water-reactive liquid, poisonous, n.o.s.	139	3130
Water-reactive liquid, toxic, n.o.s.	139	3130
Water-reactive solid, corrosive, n.o.s.	138	3131
Water-reactive solid, flammable, n.o.s.	138	3132
Water-reactive solid, n.o.s.	138	2813
Water-reactive solid, oxidizing, n.o.s.	138	3133
Water-reactive solid, poisonous, n.o.s.	139	3134
Water-reactive solid, self-heating, n.o.s.	138	3135
Water-reactive solid, toxic, n.o.s.	139	3134
Wheelchair, electric, with batteries	154	3171
White asbestos	171	2590
White phosphorus, dry	136	1381
White phosphorus, in solution	136	1381
White phosphorus, molten	136	2447
White phosphorus, under water	136	1381
Wood preservatives, liquid	129	1306
Wool waste, wet	133	1387
Xanthates	135	3342
Xenon	121	2036
Xenon, compressed	121	2036
Xenon, refrigerated liquid (cryogenic liquid)	120	2591
Xylenes	130	1307
Xylenols	153	2261

Name of Material	Guide No.	ID No.
Xylenols, liquid	153	3430
Xylenols, solid	153	2261
Xylidines, liquid	153	1711
Xylidines, solid	153	1711
Xylidines, solid	153	3452
Xylyl bromide	152	1701
Xylyl bromide, liquid	152	1701
Xylyl bromide, solid	152	3417
Yellow phosphorus, dry	136	1381
Yellow phosphorus, in solution	136	1381
Yellow phosphorus, under water	136	1381
Zinc ammonium nitrite	140	1512
Zinc arsenate	151	1712
Zinc arsenate and Zinc arsenite mixture	151	1712
Zinc arsenite	151	1712
Zinc arsenite and Zinc arsenate mixture	151	1712
Zinc ashes	138	1435
Zinc bromate	140	2469
Zinc chlorate	140	1513
Zinc chloride, anhydrous	154	2331
Zinc chloride, solution	154	1840
Zinc cyanide	151	1713
Zinc dithionite	171	1931
Zinc dross	138	1435
Zinc dust	138	1436
Zinc fluorosilicate	151	2855
Zinc hydrosulfite	171	1931
Zinc hydrosulphite	171	1931
Zinc nitrate	140	1514
Zinc permanganate	140	1515
Zinc peroxide	143	1516
Zinc phosphide	139	1714
Zinc powder	138	1436
Zinc residue	138	1435
Zinc resinate	133	2714
Zinc silicofluoride	151	2855
Zinc skimmings	138	1435
Zirconium, dry, coiled wire, finished metal sheets or strip	170	2858
Zirconium, dry, finished sheets, strips or coiled wire	135	2009
Zirconium hydride	138	1437
Zirconium nitrate	140	2728
Zirconium picramate, wetted with not less than 20% water	113	1517
Zirconium powder, dry	135	2008
Zirconium powder, wetted with not less than 25% water	170	1358
Zirconium scrap	135	1932
Zirconium suspended in a flammable liquid	170	1308
Zirconium suspended in a liquid (flammable)	170	1308
Zirconium tetrachloride	137	2503

FIRST RESPONDERS

Since the tragedy in Bhopal, India people in the United States and around the world have become more aware of the possibility of serious chemical accidents and the need for local communities to have in place an effective program to deal with chemicals that can cause death or serious injury if an accidental release occurs.

Major accidents involving releases of acutely toxic chemicals are infrequent; those that cause fatalities and serious injury to the general public are very infrequent. A community should not be unduly alarmed if it finds, within its boundaries, acutely toxic chemicals. Rather a community should view this information as a way to identify and rank potential risks and to review, improve, and build upon the existing emergency operation plan to address the potential risks in a way that is realistic and meaningful for the community.

A community should also prepare a Standing Operating Procedure for first responders to a hazardous material (hazmat) incident involving toxic chemicals. A HAZMAT incident can be defined as the uncontrolled release of hazardous materials that can cause casualties and damage to the environment. The first responders, those first on the scene, maybe fire fighting personnel, law enforcement officials, or emergency medical services. Those first responders should be aware of and have exercised an SOP consisting of safety rules essential for proper response in a serious chemical accident.

The first responder SOP should elaborate on these basic safety rules:

1. PROTECT YOURSELF – Avoid contact with Hazardous Material.

2. Don't become a casualty and create a bigger problem. Resist the urge to rush in. If entry is required, make a safe up-wind approach and minimize exposure with proper protective gear. If you must enter the site, make your stay as short as possible and use the "buddy" system. Remember safe action is more important than fast action in a hazardous materials incident.

3. IDENTIFY THE HAZARD. Assume the material is hazardous! Properly identify the substances by finding shipping papers.

4. SECURE THE SCENE. For safety control the perimeter of the site. Control all entry. Enter only with proper gear and appropriate level of protection. Keep all non-essential personnel a safe distance from the site. Monitor entry of essential personnel.

5. OBTAIN ASSISTANCE. Call for help and further information. Contact Chemtrec (800-424-9300), DEM, USCG, Health, etc. Use U.S. DOT "Emergency Response Guidebook."

"HUMAN ERROR CAUSES MOST HAZMAT EMERGENCIES"

Human error rather than equipment failure causes most accidents and spills of hazardous materials. Federal and state data show that over 60 percent of all transport vehicle accidents and spills are caused by operators' mistakes.

Trucks carry over 60 percent of the 1.5 billion tons or more of the hazardous materials -- petroleum products, chemicals, and radioactive materials -- transported annually by air, water, rail, and highway in the United States. About one in ten trucks on the roadways, depending on geographic location, carries hazardous materials, making public exposure to an accidental release of a hazardous material much more likely from a truck than from a rail, barge, or air accident.

FEDERAL RECORD-KEEPING FAULTY

Federal records imply that hazardous materials accident rates are low. However, federal accident and spill record-keeping is so uncoordinated that many accidents are not recorded. Damages from hazardous materials transportation accidents appear to be at least ten times higher than the annual amount reported to Congress by the Department of Transportation.

In an effort to control what is perceived to be a substantial public risk, state and local jurisdictions have passed regulations requiring registration fees or permits or restricting routes or hours of travel. However, data and information about shipments are so poor and difficult to acquire that state and local regulations are often developed with little or no understanding of the magnitude or nature of the problems to be controlled. For example, gasoline is by far the most frequently transported hazardous material and accounts for more annual damages than all others combined. Yet states and localities are most likely to regulate shipments of hazardous wastes and highly radioactive materials, which together account for less than three percent of the total hazardous materials transported and are already heavily regulated by the federal government.

The resulting patchwork of regulations is confusing a burdensome for industry and enforcement officers alike. Improved coordination of data collection and technical assistance for jurisdictions facing routing decisions could begin to ease these problems.

CONTAINER STABILITY CRUCIAL

The Federal regulatory standards (Title 49 of the Code of Federal Regulations) for containers used to ship hazardous materials require that packaging must be adequate to prevent release of its contents during transportation. Spent nuclear fuel must be carried in containers that meet stringent federal standards set by the Nuclear Regulatory Commission (NRC). Even in severe accidents the standards for nuclear fuel containers provide a high degree of public protection -- much greater than afforded in any other current hazardous material shipping activity. However, the standards must be meticulously followed during cask manufacture and transportation to ensure public safety.

Accident data raise serious questions about the safety of two types of transport: How stable are the tank trucks used to transport gasoline? How safe are the truck chassis that carry the sturdy, versatile tanks that may be used for transport by ship, rail or truck? The Department of Transportation should scrutinize the standards for each of these with great care.

HAZMAT TRAINING URGED

Because the risk of hazardous materials accidents is widespread, public safety forces trained in basic hazardous materials response are needed in every community. However, emergency response to hazardous materials incidents is unlike traditional fire fighting in that response personnel must identify the specific chemical hazard before approaching an accident. Furthermore, labeling on vehicles carrying hazardous materials is frequently inaccurate, complicating the situation substantially.

The development of a national strategy to provide basic first response training to emergency response personnel represents the largest unmet need related to the transportation of hazardous materials. The federal role could include developing national guidelines for levels of training, ensuring adequate funding, and providing training information. A small federal funding program could supplement state, local, and private sector efforts, if all other financial and organizational resources are tightly managed.

Copies of the report, "Transportation of Hazardous Materials," are available to the public from the U.S. Government Printing Office (GPO), Superintendent of Documents, Washington, DC 20402.

APPENDIX 3

EMERGENCY MANAGEMENT AGENCY EOP

URBAN FIRE EVACUATION

Fires occur more frequently than any other type of disaster. The annual death toll in the United States from fires averages about 8,000, and the property loss is usually about 1/4 percent of the nation's gross national product. The significance of the fire hazard can be dramatically illustrated by the fact that three major fixtures of American society have essentially evolved in response to the fire hazard: the property insurance industry, building codes, and of course, the ubiquitous fire department. Evacuation normally is the primary procedure in the response phase of emergency management.

I. RESPONSE CHECKLIST

A. Notify the occupants of the building; notify the fire department. Notification of the occupants can occur via a fire alarm, if the building has such a system. The alarm should be tested to ensure that it could actually be heard throughout the building. The proper telephone number to use to contact the fire department should be posted throughout the building, along with a floor plan showing evacuation routes.

B. Use fire extinguisher if safe to do so. Do not box yourself in, with the fire between you and a means of escape.

C. Evacuate the building. An evacuation will proceed much more smoothly and rapidly if there have been at least annual fire drills. In a multi-story building, floor wardens (and alternates) should be appointed who will ensure that their areas have been evacuated. The responsibility of assisting the handicapped should be assigned. At home, a household should actually go through the motions of how each person will exit the dwelling. Whether at home or at work, an assembly point outside the building should be designated where a nose count or roll call can occur. Other safety factors include:

1. Use only stairs, not elevators, for a fire evacuation.

2. If there is a resistance to participating in fire drills by individuals at work who think they are too busy, the best solution is to ensure that the top person in the company or institution participates.

II. COORDINATION WITH FIRE DEPARTMENT

For larger facilities, response plans can be coordinated with the local fire department during site visits. When the fire department arrives on site where a company or institution has several buildings, will there be a knowledgeable person at the front gate to direct them to the scene of the

emergency? Does the fire department have on file a site plan indicating the location of fire hydrants and connection points for standpipes or sprinkler systems, water tanks, utility lines, stored chemicals, etc.?

III. HOW TO SURVIVE A HIGH-RISE FIRE

A. Know this list of important DO's and DON'T's by heart.

1. DO's

a. If you reside in a high rise structure or when you check into a hotel or enter a meeting room, locate and make a "mental map" of the closest exit.

b. If in a hotel room, put your room key in the same place whenever you return to your room. Check windows and vents in your room to see how they work.

c. If there's a fire, feel the door with the palm of your hand before opening it. Head for the nearest exit if the hall is passable. Stay close to the floor if the smoke is heavy.

d. Remain in your room if the exit path is blocked.

e. Bail water on hot door and walls. Stuff wet towels and sheets in cracks around doors.

f. Open windows and turn on vents.

g. Tie a wet towel around nose and mouth.

2. DON'T's

a. Don't take an elevator if there's a fire.

b. Don't open your room door if it's very hot.

c. Don't break a window if you can open it instead.

d. Don't try to run through heavy smoke.

e. Don't rely on the hotel desk or building superintendent to call the Fire Department.

APPENDIX 4

EMERGENCY MANAGEMENT AGENCY EOP

MOVEMENT TO SHELTER-NUCLEAR INCIDENT

I. PURPOSE

This Appendix provides information and procedures relating to a possible evacuation in the event of a threatened nuclear attack that would affect the State of Rhode Island. Evacuation operations would be undertaken to remove the population from areas considered more likely than others to be affected directly by blast overpressure, heat, or initial nuclear radiation, if there should ever be a large-scale nuclear attack.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. A nuclear attack on the United States would most likely be preceded by a period of international tension and crisis. Sufficient time might be available for protective actions to be taken, including temporary relocation of residents of possible target areas to areas of lower risk.

2. The Burrillville portion of Rhode Island has been designated as a limited risk area for which population evacuation should be planned.

3. Certain vital facilities and activities must be continued in the evacuated high-hazard area to preserve the integrity of the Town of Burrillville, to assist in the provision of essential goods and services to the evacuated population and to continue industrial production important to national defense.

B. Assumptions

1. Evacuation of the population of the high-hazard areas will occur only at the direction of the Governor, most likely at the request of the President of the United States. Measures preparatory to such evacuation may be undertaken during a crisis at local option.

2. Evacuation of the high-hazard areas population will be directed by the Governor, not voluntary, and in general accordance with this plan.

3. Evacuation will be primarily in family groups using private vehicles over a period not to exceed three (3) days.

4. Residents not having automobiles available to them must be provided with other transportation to their destinations.

5. Some portion of the high-hazard areas population, estimated at ten percent (10%) or possibly more, can be expected to leave the area in advance of a directed evacuation. These spontaneous evacuees are expected to consist mainly of families whose members do not have public or emergency responsibilities and who have a vacation home or relatives in mind as a destination. The location, identification, and destination of this group will not be known.

6. Under certain circumstances, such as a protracted evacuation period, the Town, State or Federal government may request the resumption of certain critical production and service activities in the high-hazard areas in addition to the essential activities.

7. Return of the relocated population to their homes following evacuation will occur only at the direction of the Governor, most likely at the request of the President of the United States.

III. CONCEPT OF OPERATIONS

A. Time Phases of a Nuclear Attack Threat Evacuation

The time phases applicable to nuclear attack threat evacuation correspond to those recognized for any disaster. It may be helpful to identify them in somewhat different terms, as follows:

1. predisaster = precrisis
2. preimpact = escalating international crisis
3. impact = movement
4. emergency = sustaining
5. recovery = return

The precrisis period is normal readiness during peacetime. The crisis phase includes increased readiness and mobilization of emergency services to prepare for movement, if and when ordered by the Governor. The movement phase begins when the Governor of Rhode Island directs evacuation of nuclear attack high-hazard areas. The sustaining period begins with arrival of evacuees in the reception areas and principally involves support and care of evacuees and the indigenous population as described in the Shelter Annex. The sustaining period also includes maintenance and support of critical production and service activities by essential personnel commuting to and from the high-hazard area, as provided in this appendix. The return period begins when ordered by the Governor of Rhode Island and covers the time necessary to safely move the population back to their homes.

Evacuation would not be implemented unless there was a threat of nuclear attack of unprecedented seriousness. It should be understood that nuclear attack could occur at any time during the crisis, movement, or sustaining phases. Since there is no assurance that evacuation would be directed, readiness to implement the Town's In-place Protective Shelter Plans must be emphasized during the crisis period. If attack warning is received, everyone must take shelter in the best available nearby facilities. While the development and use of protective shelters is not covered in this annex, evacuation planning must not lose sight of the fact that, fundamentally, evacuation in response to the nuclear attack threat is movement to SHELTER; it is movement to a place where shelter is likely to provide a more realistic prospect of survival.

To summarize, the planning process that has resulted in this appendix has focused on the movement of people out of and back to the nuclear attack high-hazard areas (see Tab 1,2,3,4,5) and includes commuting of key workers to carry on essential operations in the high-hazard areas during the sustaining phase evacuation. The Reception and Care function is also covered in the Shelter Annex.

B. Overall Concept of Nuclear Attack Evacuation Operations

1. The most recent U.S. census population of the Town of Burrillville is 15,955 based on the census of 2000 - 100% of whom reside in the census tract designated as being subject to limited nuclear attack risk.

2. Approximately 30 percent (30%) of the Town of Burrillville limited-hazard area population are employees or dependents of employees of the key organizations mentioned in Paragraph II-A3 above. Every effort will be made to encourage these businesses and agencies to relocate organizationally to reception areas reserved for them. In many cases, this is necessary so that the organization will be able to maintain continuity of essential functions. In all cases, organizational relocation is an effective way to use the existing framework of the community to respond to the demands of a major crisis. It attempts to hold together units that have significant problem solving abilities and preserves the identity of valuable community resources.

C. Direction and Control

In a national security emergency that requires evacuation of nuclear attack high-hazard areas, all levels of the emergency management organization are fully mobilized and activated. Direct lines of authority exist from the Governor of Rhode Island to the Rhode Island Defense Civil Preparedness Advisory Council and through the Director of the Rhode Island Emergency Management Agency to the staff of the Emergency Management Agency who coordinate with other State agencies and local governments. The Town Manager has the authority to direct the populace of the Town in the chain of command. The control structure noted in the Basic Plan and this Annex apply to this Appendix.

D. Continuity of Government

When it becomes necessary to evacuate the State of Rhode Island's nuclear attack high-hazard areas, the government agencies of Burrillville will move their bases of operation and continue performing duties assigned under this plan. Continuity of control will be maintained by verifying that an adequate Direction and Control operation is active at the alternate PC&CC and by transferring authority before closing down the principal PC&CC. The heads of key emergency service agencies will maintain contact via mobile radio units while in transit to the PC&CC.

E. Communications: See Annex A.

F. Alerting and Warning: See Annex B.

G. Reception and Care: See Annex E.

H. Resource Management: See Annex H.

I. Public Information: See Annex C.

J. Health and Medical: See Annex I.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

In a national security emergency involving a threat of nuclear attack, the total emergency management organization at the State and local levels will be activated. Evacuation plans and procedures will be reviewed and improved to the extent possible in the time available. Responsibilities are generally the same as those shown in the Evacuation Annex. Chiefs of agencies and organizations are responsible for reviewing their procedures, for verifying that resources identified are available and in satisfactory condition, and for ensuring that all personnel--including any recently hired--are familiar with their duties in a large-scale evacuation.

Each organization listed as a vital facility or activity is expected to have a plan to relocate as a group to the reception area specified. Larger organizations and those with special needs--such as responsibility for institutionalized persons--have been assigned to specific facilities in reception areas. Chiefs of organizations are responsible for coordinating with the managers of the facilities to which they are assigned.

V. ADMINISTRATION AND LOGISTICS

The administrative and logistical problems associated with evacuation of the nuclear-attack high-hazard areas are covered in the Resource Management annex. These problems are extremely complex and in many cases, are multi-jurisdictional in nature. Mobilization of private-sector resources and capabilities is fully covered in the Resource Management annex.

VI. TABS

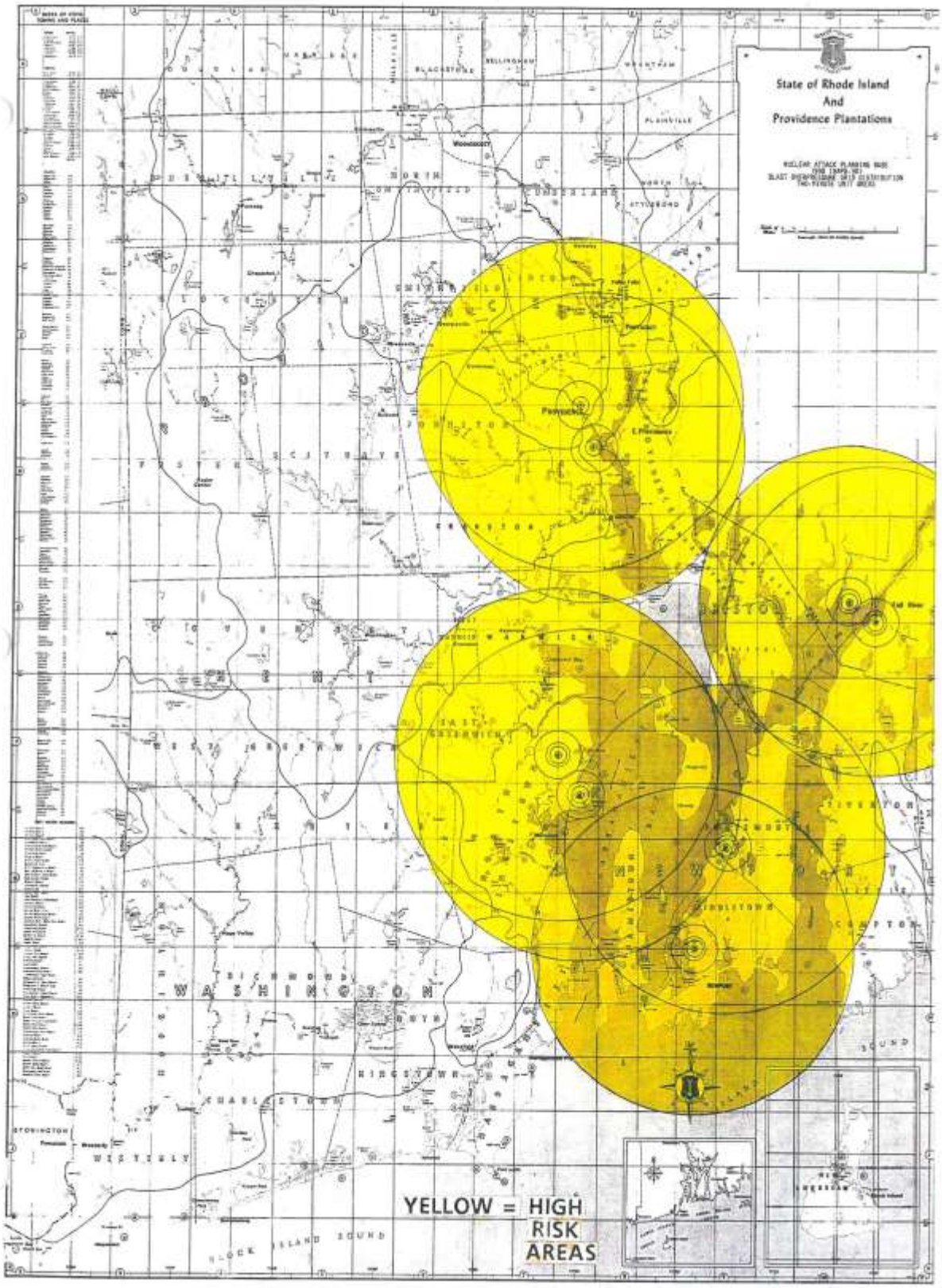
A. Nuclear Attack High Risk Areas

B. Host Areas

C. Evacuation Routes for Nuclear Attack

D. Nuclear Evacuation Routes

E. Traffic Flow Map


State of Rhode Island
And
Providence Plantations
YELLOW = HIGH RISK AREAS

NUCLEAR ATTACK HOST AREAS

The following jurisdictions of the State of Rhode Island, or portions thereof, are considered to be entirely or predominantly, low risk areas (1 PSI or below) to which people could be moved in the event of a nuclear attack on the high risk areas in the State of Rhode Island. These potential host jurisdictions will monitor shelter occupancy and provide updated status reports to the Rhode Island Emergency Management Agency EOC, during periods of emergency. The RIEMA EOC will be prepared to advise local directors of shelter space availability throughout the state. Advice on emergency evacuation routes will be provided by the RIEMA's EOC. The Host Areas, as stated in the RIMEA Population and Facility Allocation Plan are the following listed communities:

Barrington (portions of)
Burrillville
Charlestown
Coventry
Cumberland (portions of)
Exeter
Foster
Glocester
Hopkinton
Little Compton
Narragansett (portions of)
New Shoreham
North Smithfield
Richmond
Scituate
Smithfield (portions of)
South Kingstown
Westerly
West Greenwich
West Warwick
Woonsocket

APPENDIX 5

EMERGENCY MANAGEMENT AGENCY EOP

EVACUATION PLANNING CHECKLIST

I. OBJECTIVES

To provide for the orderly and expeditious evacuation of all, or any part, of the population if it is determined that such action is the most effective means available for protecting the population from the effects of any hazard.

II. PLANNING PARTICIPANTS

___ Emergency Management Staff

- ___ * Transportation Coordinator
- ___ Resource Manager

___ * Law Enforcement

- ___ * Town of Burrillville Police
- ___ * Rhode Island State Police

___ * Fire Services

___ * Department of Public Works

___ * Town Highway Department

___ * School Department Representation

___ Emergency Communications Coordinator (ECC)

___ Special Needs Groups including hearing impaired

___ Industry and Business Representatives

___ Social Services Representative

{* Key Participants}

III. ASSIGN RESPONSIBILITY FOR:

___ Making evacuation decision recommendations

- ___ Floods
- ___ Fires
- ___ Hazardous materials spills/accidents
  - ___ Chemical
  - ___ Radiological
- ___ Nuclear crisis (risk area)

___ Designating reception area

___ Designating evacuation routes

#___ Controlling movement

#___ coordinating public transportation

#___ obtaining transportation resources

#___ Security of evacuated areas

#___ maintaining and updating this Annex to the Plan

IV. OUTLINE POLICIES/AUTHORITIES FOR:

___ Authority to order an evacuation

#___ Use of transportation resources

- ___ Private vehicles
- ___ Public vehicles

___ Limiting access to evacuated areas

#___ Dealing with disabled vehicles; looting

___ Fuel Allocation

___ Transportation or care of pets

V. DEFINE EXISTING CAPABILITIES FOR:

___ Advising the public to evacuate

#___ providing public transportation

#___ coordinating and controlling traffic movement

#___ Manpower

___ Barricades; Directional signs

#___ Security of public documents and public facilities

VI. SPECIFY RESPONSE ACTIONS OR OPERATIONAL CONCEPTS FOR:

___ Defining the area to be evacuated

#___ identifying the number of people to be evacuated

#___ designating evacuation routes

#___ formulating evacuation information for the public

___ Pre-evacuation warning

___ Evacuation instructions

___ Routing information

___ Reception information

___ Defining the evacuation area so the public can understand boundaries

#___ evacuating special needs groups

___ Patients

___ Population with language barriers

___ Handicapped; Elderly

___ Persons without access to vehicles

___ Prisoners

___ Controlling movement from evacuation areas

___ Traffic control points

___ Use of barricades

#___ clearing disabled vehicles from evacuation route

#___ identifying public transportation needs

#___ Designating public transportation assembly areas or pick-up points

___ Identifying essential industries and services that require continuous operation

#___ Relocation of essential resources

___ Personnel

___ Supplies; Equipment

___ Coordinating evacuation with reception jurisdictions (if applicable)

___ Insuring reception facilities are available

#___ Security of the evacuated area

___ Fire watch

___ Limiting access

#___ designating rest or refueling areas on evacuation routes

#___ establishing alternate location for Town of Burrillville emergency government operations

#___ safeguarding essential records for continuing government functions protecting the rights of individuals

#___ determining when it is safe for the public to return to evacuated area

#__ Utilities

___ Structural safety (habitability)

___ Providing traffic control for return of population

#__ Movement of essential workers from reception area to risk area

___ Providing public education about evacuation procedures

___ Discouraging residential development in hazard areas

___ Exercising evacuation procedures

VII. SUGGESTED SUPPORTING PROCEDURES

___ Traffic Control

___ Providing public transportation

___ Health care evacuation

___ Patients

___ Nursing homes

VIII. RECOMMENDED WRITTEN AGREEMENTS

___ Road service agreements with garages, tow services, and fuel distribution sources

___ Agreements with owners of transportation resources (bus companies, school dept…)

IX. SUGGESTED ATTACHMENTS

___ List of transportation resources

___ Maps of potential hazard areas (flood prone areas, dam locations, etc.)

___ Maps of potential evacuation routes

___ Traffic control points

{# - In FEMA Review Criteria}

X. REFERENCES

A. CPG 1-6 Disaster Operations

B. CPG 1-8 Guide for Development of State and Local Emergency Operations Plans (Sept. 1990)

C. CPG 2-15 Transportation Planning Guidelines For The Evacuation Of Large Populations (September 1984)

D. Attack Environment Manual, Chapter 9: Application To Emergency Operations Planning

E. NAPB Nuclear Attack Planning Base.

APPENDIX 6

EMERGENCY MANAGEMENT AGENCY EOP

FLOOD EVACUATION

I. PURPOSE

To identify actions required to evacuate the population and protect facilities threatened by flood.

II. SITUATION

A. Principal Flood Problems

1. Flooding within Burrillville has been limited in the past. The most serious flooding problems have occurred where subdivisions have encroached upon flood plains and wetland areas.

2. Potential Flood Locations. A major area of concern is the downtown Pascoag neighborhood, specifically South Main St., Pascoag Main St., High St., Sayles Ave., Bridgeway, and Grove St.

B. Flood Protection Measures

III. RESPONSIBILITIES

A. The National Weather Service is responsible for notifying and advising Town government when conditions exist that could cause flooding.

B. Town government responsibilities are as defined elsewhere in this Plan for all hazards. In addition, the Emergency Manager/Civil Defense Director is responsible for monitoring high water conditions and for coordinating warning systems. The Town Public Works Director is primarily responsible for making recommendations on which roads are suitable for evacuation.

C. The Burrillville Chief of Police is responsible for supporting dissemination of warning concerning emergencies to all affected.

D. The State Emergency Management Agency has responsibility for keeping local government, through the local Emergency Management Agency, appraised of river conditions that could result in flooding. In this respect the State Emergency Management Agency augments and backs up the actions of the National Weather Service.

IV. CONCEPT OF OPERATIONS

Most operations would be conducted as defined elsewhere throughout this Plan. This appendix will address only those unique aspects of evacuation under threat of flood.

A. Notification of Threat

1. General flooding: The potential for flooding will be closely monitored by the National Weather Service and State Emergency Management Agency as well as other state agencies. Advisories will be passed by these agencies to the Town Emergency Management Director. Local monitoring of river and stream conditions will augment such information.

2. Flash flood: Notification of the potential for flash flooding will be received from the National Weather Service in the form of flash flood watches or warnings.

B. Increased Readiness Measures

1. On receipt of a flood watch, the Burrillville Emergency Management Director will insure that flood-monitoring procedures are implemented.

2. On receipt of a flood warning or notification of a potential or actual emergency, the Chief of Police will alert and advise the Town Manager, those on the Burrillville Emergency Notification List, citizens at risk, and key facilities.

3. Preparations will be carried out for the movement of people and critical equipment from the affected areas. The Burrillville Emergency Management Director will notify all support agencies and organizations.

C. Federal Emergency Management Agency (FEMA) 100 year flood plan

For an appreciation of the history of flooding in the Town of Burrillville, see the separately promulgated FEMA Flood Insurance Study.

D. Evacuation Decisions

The decision to evacuate any flood or inundation area will be made by the executives of affected jurisdictions based on recommendations of which roads to use from the Public Works Director. In the event of immediate danger, on-scene command authorities may make evacuation decisions.

E. Movement and Control of Evacuees

Control and movement of evacuees will be as defined in Annex F, Evacuation.

F. Reception and Care

The reception, lodging, and feeding of evacuees will be defined in Annex E - Shelter, Reception and lodging facilities will be located outside of any potential inundation area. (See Appendix A1, page 1-2).

Appendix 7
Emergency Management Agency EOP
Evacuation routes

1. SITUATION AND ASSUMPTIONS

It is generally recognized that the general population will evacuate on their own when advised of the need to do so. This is especially true when the incident is weather related and there is sufficient time to prepare to leave.

For sudden emergencies such as hazardous material incidents, there may be an immediate order to evacuate with no time to plan. The public will be alerted via several means already mentioned in this document.

It is not possible to define evacuation routes other than identifying roads likely to be utilized. The routes to be used will be determined after considering factors such as the location and type of incident, time of day, weather conditions, distance needed to evacuate (determined by the substance involved), traffic conditions etc. Officials will need to immediately determine the safest routes to exit the area or determine that the public is actually better off sheltering in place. Again, in place sheltering is determined by the type of substance involved, how quickly it moves, liquid or gas, heavier or lighter than air etc.

The following roads in the Town of Burrillville provide the quickest and safest options to vacate the area:

2. South Main St. (Rte. 100 south)
3. Wallum Lake Rd. (Rte. 100 north)
4. Route 102 (north or south)
5. East Ave. (Rte. 107) west to Rte. 100 south
6. Round Top Rd. (Rte. 96) north
7. Steere Farm Rd. (Rte. 98) to Rte. 100 south
8. Sherman Farm Rd. (Rte.98) north
9. Douglas Pike (Rte. 7) north or south

2 Special Needs Populations

a. Special needs populations in Burrillville have been identified and those individuals may require assistance regarding transportation. BEMA has at all times current lists and contact data for any individual has registered with the Rhode Island Special Needs Emergency Network (RISNER).
b. The Burrillville Police Department, all town fire departments and public works personnel may be needed to transport those with special needs to a pre-determined rally point where BEMA personnel will either shelter or bus these individuals to a safe zone.
c. Existing agreements with Dattco Bus Co. will, if needed, be utilized for transporting special needs citizens to shelters.
d. Agreements with the Burrillville School Department and the Jesse Smith Library will be activated should sheltering be required.
e. The Pascoag Fire Department has an evacuation plan that greatly assists moving not only the general population but those with special needs as well by utilizing fire apparatus to close roads at the perimeter of an incident thus restricting access to hazardous areas. By doing so, motorists will be directed toward evacuation routes and away from unsafe areas.

Appendix 8
Emergency Management Agency EOP
Scenarios / Response

1. The following scenarios are being utilized to show certain common elements that are hazardous in their natural form or elements that could become hazardous when exposed to the atmosphere, heat, sunlight, temperature etc. A release of these elements may trigger the need for an evacuation of a portion of the population.
2. There are circumstances when a shelter in place order may be given rather than evacuation order. This scenario results when a vapor cloud moves to fast and settles in areas where the population being moved will be adversely affected.
3. Methods of communicating evacuation orders will include the media, social media, code red messaging etc. When conditions are safe for residents to return, the same methods of communicating to the public will be utilized.
4. It is understood that all Burrillville Public Safety Departments will be involved in either suppression activities, security duties, traffic control, perimeter control as well as road closure barrel placement with signs, sheltering, transportation etc.
5. The Incident Command System will be utilized at all times. Certain positions within the system will be needed including an incident commander, public information officer, safety officer as well as the operational chief and positions deemed necessary by operations or incident command.

NATURAL GAS EMERGENCIES

Natural gas facts:

- Natural gas is lighter than air and tends to rise when released.
- Natural gas vapors will quickly flash back to their source when ignited
- Underground natural gas leaks will follow the path of least resistance. Soil that has been disturbed by excavation will allow for easier passage of natural gas. In addition, certain soils may cause the odorants to be "scrubbed" from the natural gas, thereby eliminating the odorant smell.
- A combustible gas indicator (CGI) or flammable gas detector will be required to determine the concentration of natural gas vapors present. Do not depend upon "smelling gas" to determine if it is present.
- Included in the initial response to these emergencies will be police and fire agencies as well as personnel from the gas company with jurisdictional responsibility. A list of emergency contacts is current and available at the communications center.
- The Emergency Response Guidebook for all first responders published by the US Department of Transportation indicates that guide #115 should be utilized for the initial phase of an emergency involving natural gas.

GUIDE 115 GASES - FLAMMABLE (INCLUDING REFRIGERATED LIQUIDS)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.

CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)

- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.
- In fires involving Liquefied Petroleum Gases (LPG) (UN1075); Butane, (UN1011); Butylene, (UN1012); Isobutylene, (UN1055); Propylene, (UN1077); Isobutane, (UN1969); and Propane, (UN1978), also refer to BLEVE – SAFETY PRECAUTIONS (Page 368)

In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping document and/or the ERAP Program Section (page 391).

GASES - FLAMMABLE (INCLUDING REFRIGERATED LIQUIDS) GUIDE 115

EMERGENCY RESPONSE

FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.

Small Fire

- Dry chemical or CO_2.

Large Fire

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire Involving Tanks

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed.

CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

FIRST AID

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim calm and warm.

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EXAMPLE OF A CODE RED MESSAGE

THIS IS AN EMERGENCY MESSAGE FROM THE TOWN OF BURRILLVILLE. THERE HAS BEEN A NATURAL GAS LEAK DISCOVERED IN THE AREA OF _____. PUBLIC SAFETY OFFICIALS ARE ON SCENE WORKING TO CORRECT THE PROBLEM AND AS A PRECAUTION FOR PUBLIC SAFETY ARE REQUESTING ANYONE WITHIN ½ MILE OF THE INCIDENT TO EVACUATE. CITIZENS SHOULD USE_____ AS ROUTES TO LEAVE THE AREA. ANYONE IN RECEIPT OF THIS MESSAGE IS WITHIN THE HALF MILE RADIUS OF THE INCIDENT AND ARE URGED TO COMPLY WITH THIS REQUEST. CONSIDER LOCATING TO FRIENDS AND OR FAMILY RESIDENCES OUTSIDE THE ½ MILE RADIUS. CITIZENS ARE URGED TO CONSULT THE WEB SITES OF THE TOWN OF BURRILLVILLE, THE BURRILLVILLE POLICE DEPARTMENT OR THE BURRILLVILLE EMERGENCY MANAGEMENT AGENCY FOR UPDATES ON THE SITUATION AND FOR MESSAGES INDICATING IT IS SAFE TO RETURN.

REPEATING, THIS A REQUEST FOR AN EVACUATION. AN ORDER TO EVACUATE COULD FOLLOW IF NEEDED BASED ON CIRCUMSTANCES. A STEADY, ORDERLY AND SAFE PROCESS FOR VACATING THE AREA FOR A SHORT TIME IS IN THE INTEREST OF PUBLIC SAFETY. IF THERE ARE CITIZENS WITHOUT THE ABILITY TO EVACUATE FOR WHATEVER REASON, CONTACT BURRILLVILLE POLICE (401-568-6255) OR EMERGENCY MANAGEMENT (401-641-0898) FOR ARRANGEMENTS.

PROPANE GAS EMERGENCIES

Propane facts

- Propane is denser than air and will accumulate in low places close to the ground.
- Will be easily ignited by any heat source
- Product is widely used for heating, and cooking for both household and commercial applications.
- Containers may explode when heated.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Ruptured cylinders may rocket.
- Vapors may cause dizziness or asphyxiation without warning. Contact with the gas and/or liquefied gas may cause burns or frostbite.

GUIDE 115 GASES - FLAMMABLE (INCLUDING REFRIGERATED LIQUIDS) ERG2012

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- **CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

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GASES - FLAMMABLE (INCLUDING REFRIGERATED LIQUIDS) **GUIDE 115**

EMERGENCY RESPONSE

FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.

Small Fire

- Dry chemical or CO_2.

Large Fire

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed.

CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

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EXAMPLE OF A CODE RED MESSAGE

THIS IS AN EMERGENCY MESSAGE FROM THE TOWN OF BURRILLVILLE. THERE HAS BEEN A TRAFFIC ACCIDENT INVOLVING A TANKER TRUCK CARRYING LIQUIFIED PROPANE IN THE AREA OF _____. PUBLIC SAFETY OFFICIALS ARE ON SCENE WORKING TO CORRECT THE PROBLEM AND AS A PRECAUTION FOR PUBLIC SAFETY ARE REQUESTING ANYONE DOWNWIND UP TO ½ MILE OF THE INCIDENT TO EVACUATE. CITIZENS SHOULD USE_____ AS ROUTES TO LEAVE THE AREA. ANYONE IN RECEIPT OF THIS MESSAGE IS WITHIN THE HALF MILE DOWNWIND RADIUS OF THE INCIDENT AND ARE URGED TO COMPLY WITH THIS REQUEST. CONSIDER LOCATING TO FRIENDS AND OR FAMILY RESIDENCES OUTSIDE THE ½ MILE RADIUS. CITIZENS ARE URGED TO CONSULT THE WEB SITES OF THE TOWN OF BURRILLVILLE, THE BURRILLVILLE POLICE DEPARTMENT OR THE BURRILLVILLE EMERGENCY MANAGEMENT AGENCY FOR UPDATES ON THE SITUATION AND FOR MESSAGES INDICATING IT IS SAFE TO RETURN.
REPEATING, THIS A REQUEST FOR AN EVACUATION. AN ORDER TO EVACUATE COULD FOLLOW IF NEEDED BASED ON CIRCUMSTANCES. A STEADY, ORDERLY AND SAFE PROCESS FOR VACATING THE AREA FOR A SHORT TIME IS IN THE INTEREST OF PUBLIC SAFETY. IF THERE ARE CITIZENS WITHOUT THE ABILITY TO EVACUATE FOR WHATEVER REASON, CONTACT BURRILLVILLE POLICE (401-568-6255) OR EMERGENCY MANAGEMENT (401-641-0898) FOR ARRANGEMENTS.

Propane gas emergencies involving fire

EXAMPLE OF A CODE RED MESSAGE

THIS IS AN EMERGENCY MESSAGE FROM THE TOWN OF BURRILLVILLE. THERE HAS BEEN A TRAFFIC ACCIDENT WITH FIRE INVOLVING A TANKER TRUCK CARRYING LIQUIFIED PROPANE IN THE AREA OF _____. PUBLIC SAFETY OFFICIALS ARE ON SCENE WORKING TO CORRECT THE PROBLEM AND FOR PUBLIC SAFETY ARE REQUESTING ANYONE WITHIN 1 MILE OF THE INCIDENT TO EVACUATE. CITIZENS SHOULD USE_____ AS ROUTES TO LEAVE THE AREA. ANYONE IN RECEIPT OF THIS MESSAGE IS WITHIN THE 1 MILE RADIUS OF THE INCIDENT AND ARE URGED TO COMPLY WITH THIS REQUEST. CONSIDER LOCATING TO FRIENDS AND OR FAMILY RESIDENCES OUTSIDE THE ½ MILE RADIUS. CITIZENS ARE URGED TO CONSULT THE WEB SITES OF THE TOWN OF BURRILLVILLE, THE BURRILLVILLE POLICE DEPARTMENT OR THE BURRILLVILLE EMERGENCY MANAGEMENT AGENCY FOR UPDATES ON THE SITUATION AND FOR MESSAGES INDICATING IT IS SAFE TO RETURN. REPEATING, THIS A REQUEST FOR AN EVACUATION. AN ORDER TO EVACUATE COULD FOLLOW IF NEEDED BASED ON CIRCUMSTANCES. A STEADY, ORDERLY AND SAFE PROCESS FOR VACATING THE AREA FOR A SHORT TIME IS IN THE INTEREST OF PUBLIC SAFETY. IF THERE ARE CITIZENS WITHOUT THE ABILITY TO EVACUATE FOR WHATEVER REASON, CONTACT BURRILLVILLE POLICE (401-568-6255) OR EMERGENCY MANAGEMENT (401-641-0898) FOR ARRANGEMENTS.

APPENDIX 9
EMERGENCY MANAGEMENT AGENCY EOP COMMUNICATIONS PLAN PUBLIC NOTIFICATION

I Purpose

This section is written to outline the means of communicating evacuation messages to the general public. In order to safeguard the safety of residents during events when evacuations are needed, messages must be conveyed in a timely manner utilizing all methods available. Depending on the seriousness of the issue, a door-to-door notification will be made by public safety officials.

Certain events may require a shelter-in-place order be transmitted. These types of incidents occur and could easily worsen in a short period of time. Moving people into this type of atmosphere creates a greater risk for citizens and first responders alike. This is especially true when special populations are located in a hazardous zone. Examples include elderly housing complexes, nursing homes, hospitals and other locations that have similar special needs residents.

In order to receive information during emergency situations, the community needs to be made aware of the code red reverse 911 system and the proper means of signing for this program. This system provides one of the quickest methods of disseminating information and instructions at the time of the incident. The Burrillville Emergency Management Agency provides instructions for code red activation as well as safety messages to the public via social media specifically a “facebook” page and/or “Twitter” on a regular basis or as a need arises. The Town of Burrillville web page has the proper and user friendly link for anyone wishing to sign-up for code red notifications.

II Operation Methods

This section lists the specific methods that can be utilized for public notifications when necessary:

1. Code Red – This reverse 911 system is utilized in Burrillville and many other communities and is available to all residents and visitors. The Burrillville town web site has the link to activate the system.
2. RI Broadcasters – This program enables officials to notify all media outlets of any type of pertinent events from school closings to emergency evacuation orders. Emergency communications personnel have the confidential access codes and can disseminate data without delay 24/7/365.
3. Emergency Alert System (EAS) – This national system can be utilized by state and local authorities to transmit emergency messages utilizing all electronic media. This system is designed to be used for major events and is accessed via the RI Emergency Management Agency (RIEMA).
4. Web sites – The Town of Burrillville will post messages on the town web page. The Burrillville Police and Emergency Management Agency will also post to their respective facebook pages.
5. Police vehicle method – When necessary, Burrillville Police Department vehicles will respond and utilize the public address feature of their cruisers or move door-to-door to broadcast messages.

There are other agencies in Burrillville that utilize the code red messaging system including the Harrisville Fire District water Department and the Pascoag Utility District. The Burrillville School Department utilizes a different program, Schools Messenger to reach

parents and/or guardians of children enrolled in the town school system. In order to prevent duplication of information, any data these agencies may have that is pertinent to the given situation should be forwarded to The Burrillville Police Department who will be issuing the code red alert. Following this practice will prevent information overload and the duplication of messages. This practice will enhance the ability of officials to manage an incident and will also ensure that any and all agencies with jurisdictional responsibility will be able to get their information out to the public.

The immediate goal of the evacuation order is to move people from the hazard zone. These zones are based on the type of incident and in the case of a hazardous material episode, the type of product involved, weather conditions, time of day and other factors. As previously noted, all public safety vehicles in Burrillville carry current up-to-date hazardous material guidebooks which will enable first responders to quickly identify a hazard and also to identify the evacuation distances if applicable. Residents will be advised to stay with family and friends away from the immediate area until the situation is corrected and officials determine the area in question is safe for residents to return.

Should residents be unable to evacuate for any reason, a temporary shelter will be activated by the Burrillville Emergency Management Agency.

III Emergency Contacts

Should a situation requiring evacuation be a large event such as a flood, hurricane or other weather issue, public safety and government officials may need to activate the Burrillville Emergency Operations Center (EOC) located at the Wallace Lees Public Safety Complex. All operational duties will be directed from this facility. Officials will remain in constant contact with responders in the field and will need to update agencies with jurisdictional responsibilities. All logistic work, requests for resources, notifications and media reports will also originate from this location. A list of agencies and contact information that may be needed to assist officials in Burrillville (some numbers are confidential) are readily available at the Emergency Operations Center and are also available at the Emergency Communications Division of the Burrillville Police Department.

The Burrillville Police Communications Division is responsible for dispatching police, fire and EMS units and also to coordinate responses from other agencies such as the Department of Public Works. If assistance is needed from state agencies the Burrillville Emergency Management Agency will secure resources via a state computer network that is manned 24/7. Resources could be food for shelters, personnel to secure evacuation routes, medical assistance etc.

IV Quick Reference guide for citizens

The following is a guide contains non-confidential information for residents

CODE RED MESSAGING

www.burrillville.org

Sign up to receive code red messages, the most effective means of being notified of emergency situations, instructions, evacuation routes, sheltering etc.

Burrillville Police Dept.	568-6255	www.burrillville.org/police
Burrillville Public Works	568-4440	www.burrillville.org
RI Highway Dept.	568-4322	www.dot.ri.gov
Burrillville School Dept.	568-1301	www.bsd-ri.net
Burrillville Animal Control	568-9480	www.burrillville.org
Burrillville Emergency Mgmt.	641-0898	www.burrillville.org
Burrillville Waste Water	568-6296	www.burrillville.org
Algonquin Gas	568-6300	www.spectraenergy.com
Ocean State Power	568-9550	www.transcanada.org
American Red Cross	831-7700	www.redcross.org
Pascoag Utility District	568-6222	www.pud-ri.gov
National Grid	1-800-465-1212	www.nationalgrid.com
Harrisville Fire District	568-2224	www.harrisvilleri.org
Pascoag Fire District	568-4920	www.pascoagfire.org
Nasonville Fire	568-5020	www.firedepartment.net
OMFD	568-5720	www.oaklandmaplevillefd.com
RI Emergency Mgmt. Agency	946-9996	www.riema.ri.gov
FEMA	1-202-646-2500	www.ready.gov
Poison Control	1-800-682-9211	