

AWARENESS AND PREPAREDNESS FOR EMERGENCIES AT LOCAL LEVEL: A PROCESS FOR HANDLING TECHNOLOGICAL ACCIDENTS

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1. INTRODUCTION

In late 1986, following various industrial accidents that occurred in both highly industrialized and industrializing countries, resulting in adverse impacts on the environment, the United Nations Environment Programme (UNEP) suggested a series of measures to help governments, particularly in developing countries, minimize the occurrence and harmful effects of chemical accidents and emergencies. In particular, even if it is believed that all industrial accidents are preventable, one must be realistic enough to prepare response plans in the event that such accidents occur. Such preparation should lead to a better understanding of local hazards, and thus to preventive actions.

In this context, the UNEP Industry and Environment Office (IEO) has developed, in co-operation with industry, a Handbook on Awareness and Preparedness for Emergencies at Local Level (APELL), designed to assist decision-makers and technical personnel in improving community awareness of hazardous installations, and in preparing response plans should unexpected events at these installations endanger life, property or the environment.

APELL has two main goals:

- Create and/or increase community awareness of possible hazards within the community.
- Based on this awareness, develop a co-operative plan to respond to any emergencies that these hazards might present.

The APELL Process advocates a co-operative approach to technological accidents. APELL has also been prepared by UNEP/IEO in a co-operative way, with the Chemical Manufacturers' Association (CMA) and the Conseil Européen des Fédérations de l'Industrie Chimique (CEFIC). It has involved other international organizations (and in particular the CEC, OECD, WHO, UNIDO) and non-governmental associations.

2. THE APELL PROCESS

2.1. Why APELL?

Recent events raise the issue of safety and emergency preparedness for all people in all nations of the world.

Everybody still has in mind the dioxin-containing release in Seveso in 1976, the propane explosion in Mexico City in 1984, the release of methylisocyanate at Bhopal in 1984, the fire and resultant discharge of contaminated waters into the Rhine in 1986 from a warehouse in Basel.

It is now universally acknowledged that every disaster, whatever the cause, has an environmental impact.

Whilst most industrial accidents can be contained within the boundaries of the industrial plant, there are those cases where impacts extend beyond its boundaries to affect the plant neighbourhood and have adverse short or long-term consequences affecting life, life-support systems, property, or the social fabric. The extent of loss caused by such accidents depends to a large extent on the actions of the first responders to an emergency, within the industrial facility and the local community around it.

Clearly, adequate response to such situations calls for well-coordinated actions of individuals and institutions from the local community. This can only be achieved if there is awareness in the community of the possible hazards and of the need for mutual preparedness to cope with their consequences.

The APELL Handbook describes a process for such a co-operative action to improve community awareness and emergency preparedness.

2.2. What is APELL?

APELL involves two basic aspects

- To create, and/or increase community awareness of the possible hazards involved in the manufacture, handling and use of hazardous materials, and of the steps taken by authorities and industry to protect the community from them.
- To develop, on the basis of this information, and in co-operation with the local communities, emergency response plans involving the entire community, should an emergency endangering its safety arise.

Thus APELL consists of two parts

- Provision of information to the community which will be called "Community Awareness".
- Formulation of a plan to protect the public, which will be called "Emergency Response".

APELL addresses all emergencies related to any industrial or commercial operation with potential for fire, explosion, spills or releases of hazardous materials. How to determine which industrial and commercial operations should be concerned by the APELL Process is in principle the result of a risk assessment. In most cases however simple judgement and common sense may identify the facilities which may present a potential for a major accident. Also the criteria (lists of substances and threshold levels) set up in international or national regulations or recommendations may provide guidance.

APELL is flexible. It is clear that the various countries differ in culture, value systems, community infrastructure, response capabilities and resources, and in legal and regulatory requirements. Their industries present different potential dangers and risks. However, we believe all these differing situations have one common need: the ability to cope with an industrial accident affecting the local community. The APELL Handbook provides the basic concepts for the development of local action plans, which can be adapted to the local conditions.

Since the containment of health and environmental impacts depends upon the speed and scope of the initial local response, the emphasis is thus directed at local level participation. The Handbook recognizes, however, the fundamental roles of national governments, ministries, and the chief executive officers of industries to support and assist these efforts at the local level.

Finally, this Handbook is neither a unique model for the co-ordination of the efforts of all participants in the APELL Process, nor is it a detailed manual of the actions and requirements for initiating and implementing the APELL Process successfully. It is more a policy document that sets out the objectives and overall organizational framework for APELL. The objectives remain unchanged yet the mechanics of the operation will change from place to place, and must be adapted to specific local conditions and requirements.

2.3. What are the objectives of APELL?

APELL's overall goals are: to prevent loss of life or damage to health and social well-being, avoid property damage, and ensure environmental safety in the local community. Its specific objectives are to:

- Provide information to the concerned members of the community on the hazards involved in industrial operations in its neighbourhood, and the measures taken to reduce these risks.
- Review, update, or establish emergency response plans in the local area.
- Increase local industry involvement in community awareness and emergency response planning.
- Integrate industry emergency plans with local emergency response plans for the community to handle all types of emergencies.
- Involve members of the local community in the development, testing and implementation of the overall emergency response plan.

2.4. Who are the APELL partners? What are their responsibilities?

At the local level there are three very important partners who must be involved if APELL is to succeed:

- Local authorities: these may include province, district, city or town officials, either elected or appointed, who are responsible for safety, public health and environmental protection in their area.
- Industry: industrial plant managers from either state-owned or private companies are responsible for safety and accident prevention in their operations. They prepare specific emergency preparedness measures within the plant and establish review of the industrial plant's operation. But their responsibilities do not stop at the fence. As leaders of industrial growth and development, they are in the best position to interact with local authorities and leaders, to provide awareness on how the industrial facility operates, and on how it could affect its environment and to help prepare appropriate community response plans in the event of an emergency. The involvement and active participation of the work force is also important.

- Local community and interest groups, such as environmental, health, lay care, media, and religious organizations, and leaders in the educational and business sectors that represent the concerns and views of their constituents in the community.

At the national level, governments have an important role to provide the co-operative climate and support under which local participants can achieve better preparedness. Through leadership and endorsement, national authorities should foster participation of everyone at the local level. Industry associations should also get involved.

There are other partners: the APELL Process is designed so as to harmonize with other initiatives and efforts in reducing risk and hazards as well as their consequences.

3. STARTING THE APELL PROCESS

3.1. How will APELL work?

All industrial facilities have a responsibility to establish and implement a "facility emergency response plan". A key foundation for such a plan is a safety review of facility operations. This safety review, which is central to a company safety plan, examines in detail those items that affect safe operation of the facility. One part of this in-depth review by the facility management is the preparation of an emergency response plan. It is worth noting that several components of the emergency response plan involve notification and communication, with both authorities and citizens of the local area surrounding the industrial facility.

In addition to the existence of facility emergency plans, there may also be national government emergency plans or programmes in place. The APELL Process is designed to build, using all emergency plans that may already exist as a basis, a co-ordinated single plant that will operate effectively at the local level where first response efforts are so critical. While national organizations and plans exist for emergency response, there is always the need for an effective support structure at the local level.

In order for local authorities and local leaders to play their most effective roles with respect to awareness and preparedness for emergencies, there must be close and direct interaction with representatives of those industrial facilities to which the local area plays host. Indeed, local authorities and leaders and industrial representatives need to find the means to build a bridge between local government responsibilities and industry responsibilities.

The APELL Process recognizes this need for a bridge. Figure 1 contains a diagram showing schematically how industry representatives and local authorities/leaders can interact to form a partnership which will provide the needed bridge, or "Co-ordinating Group" to ensure close and direct interaction between industry and the local community. Figure 2 indicates how the bridge can operate in implementation of the APELL Process.

The Co-ordinating Group is clearly the mainspring of the APELL Process. Members of the Co-ordinating Group must be able to command the respect of their various constituencies, e.g. industry, local group, etc., and be willing to act co-operatively in the interest of local well-being, safety and

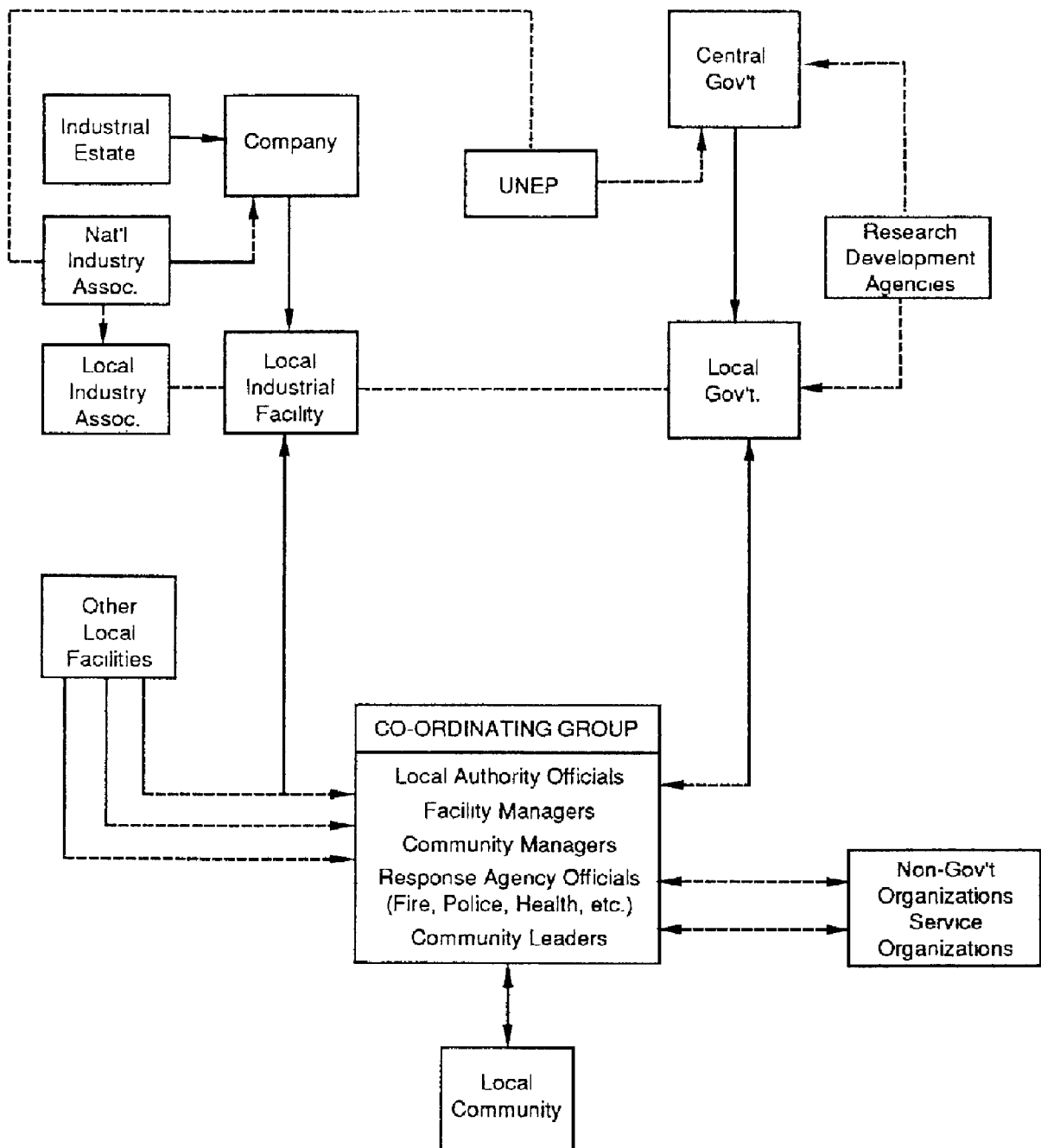


Fig.1. APELL information and organization flow chart

property. The Leader(s) of the Co-ordinating Group ideally should be able to ensure motivation and co-operation of all segments of local society regardless of cultural, educational, economic and other dissimilarities among these segments. This attribute of the Leader(s) of the Co-ordinating Group needs to be kept firmly in mind when selecting individuals to act in the role of Leader(s).

In sum, the Co-ordinating Group's role arises since industry is primarily responsible for protective actions "inside the fence" while local government is responsible for the safety of the general public. The role of the Co-ordinating Group is to provide the bridge between industry and local government with the co-operation of community leaders (see Figure 2) and develop a unified and co-ordinated approach to emergency response planning and communication with the community. It should be clear that the Co-ordinating Group has not itself a direct operational role during an emergency, but is preparing the various parties involved to be ready and know their tasks should an accident occur.

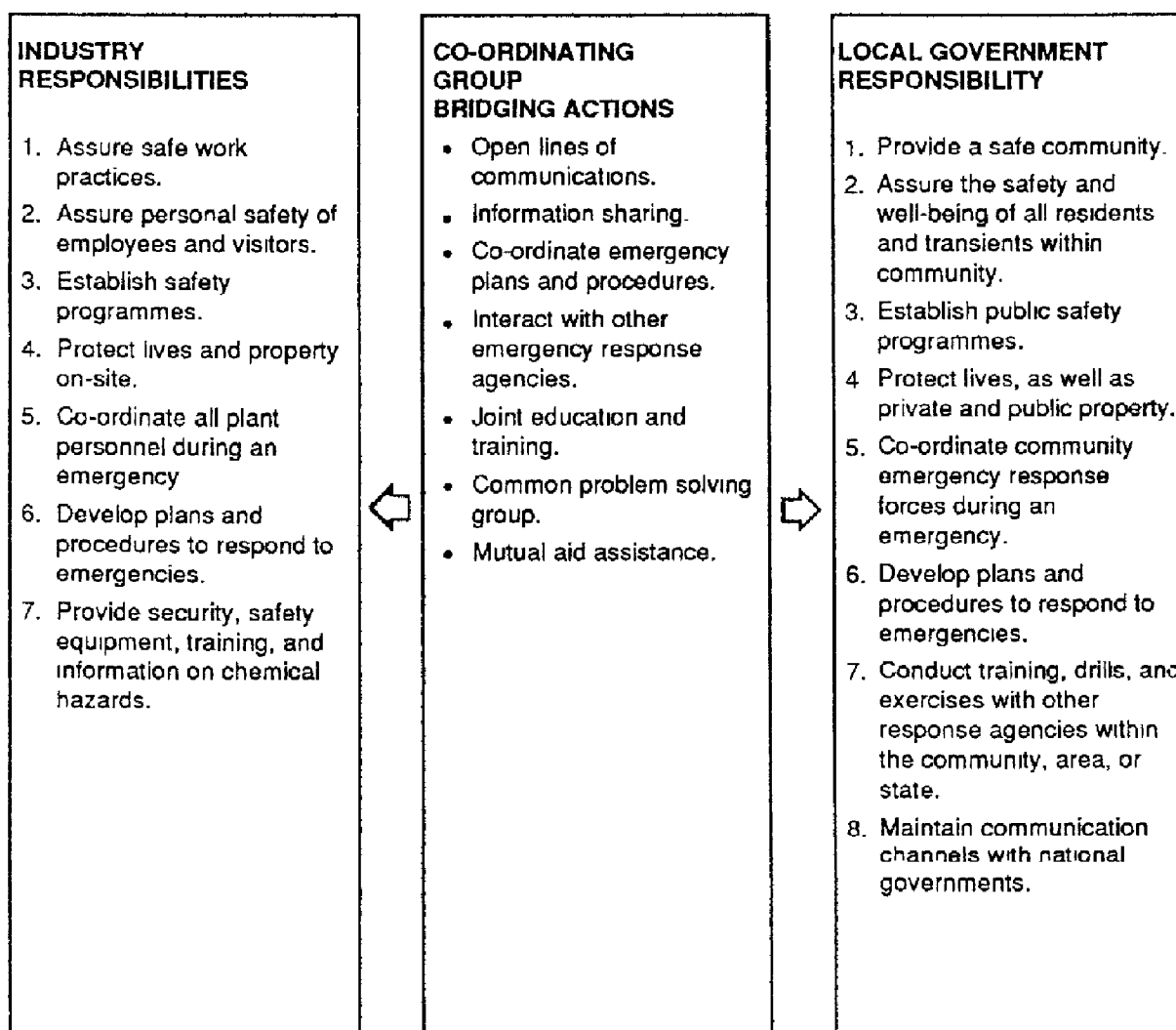


Fig.2. Responsibility bridge

3.2. How to form the Co-ordinating Group?

The key organizational step to make the APELL Process work is the formation of a Co-ordination Group representing the various constituencies that have or should have a voice in the establishment of an emergency response plan. The group should include members from local authorities, local community leaders and industry. It is important to bear in mind that all affected parties have a legitimate interest in the choices among planning alternatives. Strong efforts should therefore be made to ensure that all groups with an interest in the planning process are included.

In particular, plant managers of industrial facilities in the local area need to be active participants in the Co-ordinating Group. In turn, local authorities and community leaders need to know that these plant managers are acting with the blessing and authority of the highest officers of their respective organizations, in order to ensure the success of the APELL Process.

The APELL Process may be initiated by any member of the three involved groups: local authorities, local community leaders, or industry managers.

4. BUILDING COMMUNITY AWARENESS

4.1. The need for the local community to know about hazardous installations

Citizens in local communities have expressed concern that potentially hazardous materials which could affect their health and environmental safety may be produced or used in their community. These citizens want to know if these materials are present; their concern is often termed the "Right-to-know".

In addition they need to be informed about potential hazards of hazardous installations in order to understand why an emergency plan has been established, how it works and what actions they are expected to take in case of an emergency.

Such principles are embodied in many regulations or recommendations such as the Guidelines for World Industry set forth by the International Chamber Of Commerce.

4.2. What and how to communicate?

There is really nothing mysterious about a community awareness programme. A fenced-in industrial plant can look threatening to the public. But much of the mystery disappears when people know what the plant uses and manufactures, that it has a good safety plan and safety record, and that an effective emergency plan exists.

No one can prescribe the activities necessary for a local awareness programme that will fit every industrial facility or complex at every location. However, industry managers, local authorities or community leaders should consider the following points:

- define the local community concerned;
- inventory existing local community contacts;
- contact other industrial facilities to co-ordinate community activities;
- plan an initial meeting of the Co-ordinating Group;

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- develop fact sheets or kits on each industrial operation;
- develop fact sheets on community preparedness;
- assign responsibility for communications tasks;
- look for communication opportunities;
- select methods of communications appropriate for local circumstances;
- get outside help;
- inform employees and personnel.

4.3. The do's and don'ts of information

In preparing and building this community awareness, the following considerations should be borne in mind:

- all parties active in the APELL Process have a duty to keep the public informed as to the progress. Moreover all parties have a responsibility to ensure that the public does not receive conflicting or confusing messages;
- developing relationships with the media is not a magical process, but rather one that requires time and effort on the part of plant managers, local authorities, community leaders and the Co-ordinating Group as a whole;
- media relation efforts, like local area co-operation programmes cannot be started after trouble has arisen.

Some of these considerations may seem obvious... but recent events show that they are not that obvious!

5. ACHIEVING PREPAREDNESS FOR EMERGENCIES

5.1. Issues to be addressed

Among the first steps in the planning process are the gathering of information and assessment of the current situation. Therefore one of the first tasks facing the Co-ordinating Group is the collection of basic data. This can be done through personal contacts by Co-ordinating Group members or by surveys sent to local industry and government offices to:

1. Identify local agencies making up the community's potential local awareness and response preparedness network.
2. Identify the hazards that may produce an emergency situation.
3. Establish the current status of community planning and co-ordination for hazardous materials emergency preparedness and ensure that potential overlaps in planning are avoided.
4. Identify the specific community points of contact and their responsibilities in an emergency.
5. List the kinds of equipment and materials which are available at the local level to respond to emergencies.

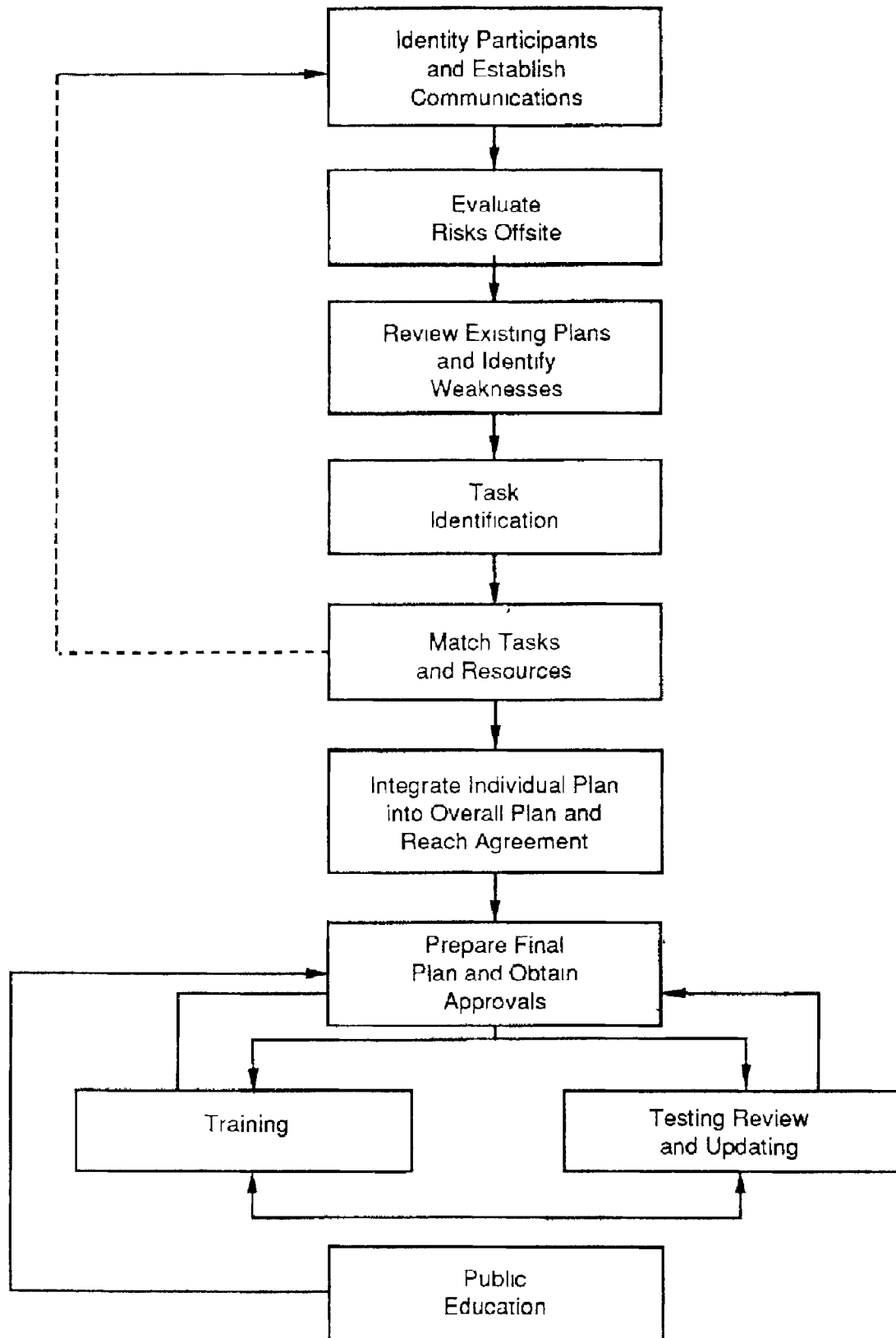


Fig. 3 Community emergency plan implementation flow chart

6. Identify organizational structure for handling emergencies.
7. Check if the community has specialized emergency response teams to respond to hazardous materials releases.
8. Define the community emergency transportation network.
9. Establish the community procedures for protecting citizens during emergencies.
10. Set up a mechanism that enables responders to exchange information or ideas during an emergency with other entities.

The above issues cover only some of the major considerations or issues that should be resolved within or by the Co-ordinating Group. More details will be found in the APELL Handbook.

5.2. A ten-step approach to the APELL Process for planning for emergency preparedness

Based on experience, a ten-step approach to implement the APELL Process can be set forth which leads to a useful and effective integrated community emergency response plan. Significant effort will be required to complete each step. Listed below are the ten steps which are also presented in a flow chart (see Figure 3).

- Identify the emergency response participants and establish their roles, resources and concerns;
- Evaluate the risks and hazards that may result in emergency situations in the community;
- Have participants review their own emergency plan for adequacy relative to a co-ordinated response;
- Identify the required response tasks not covered by existing plans;
- Match these tasks to the resources available from the identified participants;
- Make the changes necessary to improve existing plans, integrate them into an overall community plan and gain agreement;
- Commit the integrated community plan to writing and obtain approvals from local governments;
- Educate participating groups about the integrated plan and ensure that all emergency responders are trained;
- Establish procedures for periodic testing, review and updating of the plan;
- Educate the general community about the integrated plan.

The APELL Handbook describes the content of each step and provides a checklist useful for completing it.

6. CONCLUSION

In preparing the APELL Handbook, UNEP/IEO wishes to provide a tool which will enable national and local authorities, together with industry, to be better prepared to prevent and respond to industrial accidents. Of course, we know that this is just an element, a starting point, and that other tools will need to be developed.

In particular we hope that we will be able to start a network to exchange information and experiences throughout the world on the subject. UNEP looks forward to this international co-operation.