NRT

Incident Command System/ Unified Command (ICS/UC)

Technical Assistance Document

THE NATIONAL RESPONSE TEAM

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APPENDICES

ACKNOWLEDGMENTS

This document is a product of the U. S. National Response Team (NRT), the organization of 16 federal agencies responsible for national planning and coordination of oil and hazardous substance emergency preparedness and response. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP)[1] establishes the roles and responsibilities of the NRT and the Regional Response Team (RRTs). The NCP implements legislative authorities including the Clean Water Act[2] (CWA), as amended by the Oil Pollution Act of 1990 (OPA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)[3]; and the Emergency Planning and Community Right-to-Know Act (EPCRA or Title III of the Superfund Amendments and Reauthorization Act [SARA][4]). The NRT is chaired by the U.S. Environmental Protection Agency (EPA), and the U.S. Coast Guard (USCG) serves as Vice Chair. The RRTs are co-chaired by EPA and USCG.

The NRT acknowledges the federal agencies participating in the NRT, and state and federal agencies participating on the RRTs, for their contributions in preparing this document. We invite your comments or concerns on the usefulness of this document in planning for responses to oil discharges or hazardous substance releases. Please send your comments to:

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U.S. National Response Team Member Agencies:

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For more information on the NRT, please visit www.nrt.org

[1] 40 CFR part 300
[2] 33 U.S.C. § 1251 et seq.
[3] 42 U.S.C. § 9601 et seq.
[4] 42 U.S.C. § 11002 et seq.

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DOCUMENT PURPOSE AND ORGANIZATION

The purpose of this U.S. National Response Team (NRT) technical assistance document is to provide guidance to all responders who are part of the National Response System (NRS) on the organizational management concept of an Incident Command System (ICS) led by a Unified Command (UC) for emergency response.[5] The NRT and Regional Response Team (RRTs) hope that this document will:

- Increase awareness of ICS/UC;
- Improve coordination among responders during responses and exercises;
- Encourage interagency training programs;
- Encourage development of a common language and response culture among all response agencies; and
- Help members of the NRS achieve consistent, effective, and efficient responses.

This document updates the *ICS/UC Technical Assistance Document* published by the NRT in 1996. It highlights the issues and lessons learned identified by NRT member agencies that have arisen through responses to major incidents throughout the U.S. since the 1996 document was completed. It also provides guidance that should lead to more effective and efficient responses under the NRS. Issues and lessons learned include:

- ICS is flexible and should be viewed as a response tool, not a response rule;
- ICS application will vary depending on the needs of the incident;
- One individual can fill multiple ICS functions;
- ICS administration should not detract from response efforts;
- UC members should possess response decision-making authority;
- Planning for and exercising ICS/UC is critical to its success;
- The Liaison Officer can play a key role in interfacing with criminal investigators;
- The RRT is a valuable resource to obtain consensus when the UC cannot; and
- Local government responders are key participants in establishing ICS/UC.

The NRT believes that clarifying and promoting the use of ICS will join local, state, and federal response efforts - through common structures, training, and joint exercises - that will continue to make safer and more effective incident response. The NRT plans to update this technical assistance document periodically to reflect the evolving use of an ICS led by a UC.

[5] This document is available on the NRT's web site at *www.nrt.org*.

For the purposes of this document On-Scene Coordinator (OSC) means federal On-Scene Coordinator (FOSC) unless otherwise specified.

Note: This document is intended solely as guidance and was designed to provide technical assistance from the NRT on management of responses to releases of hazardous substances, pollutants, or contaminants, or discharges of oils (or threats of either). This document does not impose any legal obligations or duties on any party. This document does not supersede the NCP or any regulations issued by Federal agencies.

1. INTRODUCTION: ICS/UC AND THE NRS

Managing a major response – especially a complex, multi-jurisdictional response – is one of the most important challenges facing the National Response System (NRS). Effective coordination among local, state, and federal responders at the scene of a response is a key factor in ensuring successful responses to major incidents. An Incident Command System/Unified Command (ICS/UC) is an efficient on-site tool to manage all emergency response incidents, and UC is a necessary tool for managing multi-jurisdictional responses to oil spills or hazardous substance releases. Understanding the concepts of ICS/UC is as important for local responders, who generally arrive on-scene first and thus are most likely to implement the management system, as it is for state and Federal organizations that may be joining the ICS/UC.

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) states that the NRS functions as an ICS under the direction of the On-Scene Coordinator (OSC).[6] The NCP also states that the basic framework for the NRS response management structure is a system (e.g., a unified command system) that brings together the functions of the local government, state government, federal government, and the Responsible Party (RP) to achieve an effective and efficient response.[7] In addition, the Hazardous Waste Operations and Emergency Response (HAZWOPER) standards include the Incident Command System for emergency response.[8]

ICS: An Effective System

The U.S. Department of Transportation, the U.S. Department of the Interior, and the U.S. Environmental Protection Agency issued the National Preparedness for Response Exercise Program guidelines describing ICS as "the system to achieve the coordination necessary to carry out an effective and efficient response."

When planned for and practiced, ICS/UC is viewed as the most effective response management system to address discharges or releases. As a result, the U.S. National Response Team (NRT) and Regional Response Teams (RRTs) endorse the use of ICS/UC and hope that this document helps the entire response community understand the basic concepts of ICS/UC. ICS/UC is an integrated and flexible structure that emphasizes cooperation and coordination in local, state, and federal responses to complex multi-jurisdictional, multi-agency incidents. This structure is necessary to use resources effectively – whether the resource comes from the parties responsible for the release or discharge, the NRT and RRT federal agencies, or the affected local governments and states. Although ICS/UC was originally developed for multi-jurisdictional incidents, the NRT advocates ICS/UC as an effective tool for managing both large and small incidents, especially those involving hazardous substance releases or oil spills.

[6] Appendix E to part 300, "Oil Spill Response."
[7] Title 40 CFR 300.105(d).
[8] Title 29 CFR 1910.120 and 29 CFR 1926.65 for OSHA and 40 CFR 311 for EPA.

2. WHAT IS ICS/UC?

2.1 What is an Incident Command System?

ICS is a standardized on-scene incident management concept designed specifically to allow responders to adopt an integrated organizational structure equal to the complexity and demands of any single incident or multiple incidents without being hindered by jurisdictional boundaries.

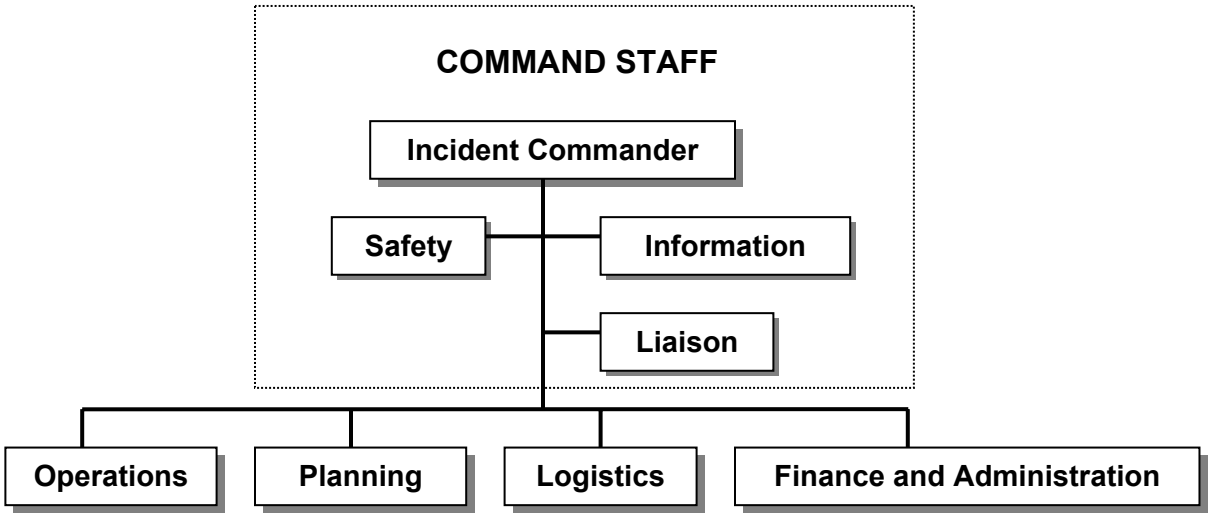
In the early 1970s, ICS was developed to manage rapidly moving wildfires and to address the following problems:

- Too many people reporting to one supervisor;
- Different emergency response organizational structures;
- Lack of reliable incident information;
- Inadequate and incompatible communications;
- Lack of structure for coordinated planning among agencies;
- Unclear lines of authority;
- Terminology differences among agencies; and
- Unclear or unspecified incident objectives.

In 1980, federal officials transitioned ICS into a national program called the National Interagency Incident Management System (NIIMS), which became the basis of a response management system for all federal agencies with wildfire management responsibilities. Since then, many federal agencies have endorsed the use of ICS, and several have mandated its use.

An ICS enables integrated communication and planning by establishing a manageable span of control. An ICS divides an emergency response into five manageable functions essential for emergency response operations: Command, Operations, Planning, Logistics, and Finance and Administration. Figure 1 below shows a typical ICS structure.

Figure 1 — Incident Command System Structure



The following is a list of the duties generally associated with each ICS function.[9]

- The **Incident Commander** (IC) or the **Unified Command** (UC) is responsible for all aspects of the response, including developing incident objectives and managing all incident operations.

- The **Command Staff** is responsible for public affairs, health and safety, and liaison activities within the incident command structure. The IC/UC remains responsible for these activities or may assign individuals to carry out these responsibilities and report directly to the IC/UC.

  - The **Information Officer's** role is to develop and release information about the incident to the news media, to incident personnel, and to other appropriate agencies and organizations.

  - The **Liaison Officer's** role is to serve as the point of contact for assisting and coordinating activities between the IC/UC and various agencies and groups. This may include Congressional personnel, local government officials, and criminal investigating organizations and investigators arriving on the scene.

  - The **Safety Officer's** role is to develop and recommend measures to the IC/UC for assuring personnel health and safety and to assess and/or anticipate hazardous and unsafe situations. The Safety Officer also develops the Site Safety Plan, reviews the Incident Action Plan for safety implications, and provides timely, complete, specific, and accurate assessment of hazards and required controls.

Incident Commander

The IC is faced with many responsibilities when he/she arrives on scene. Unless specifically assigned to another member of the Command or General Staffs, these responsibilities remain with the IC. Some of the more complex responsibilities include:

- Establish immediate priorities especially the safety of responders, other emergency workers, bystanders, and people involved in the incident
- Stabilize the incident by ensuring life safety and managing resources efficiently and cost effectively.
- Determine incident objectives and strategy to achieve the objectives.
- Establish and monitor incident organization.
- Approve the implementation of the written or oral Incident Action Plan.
- Ensure adequate health and safety measures are in place.

- The **General Staff** includes **Operations, Planning, Logistics,** and **Finance/Administrative** responsibilities. These responsibilities remain with the IC until they are assigned to another individual. When the Operations, Planning, Logistics or Finance/Administrative responsibilities are established as separate functions under the IC, they are managed by a section chief and can be supported by other functional units.

  - The **Operations** Staff is responsible for all operations directly applicable to the primary mission of the response.

  - The **Planning** Staff is responsible for collecting, evaluating, and disseminating the tactical information related to the incident, and for preparing and documenting Incident Action Plans (IAPs).
  - The **Logistics** Staff is responsible for providing facilities, services, and materials for the incident response.

[10] See Appendix A for more information about the five sections of an ICS.

- The **Finance and Administrative** Staff is responsible for all financial, administrative, and cost analysis aspects of the incident.

The following is a list of Command Staff and General Staff responsibilities that either the IC or UC (see Section 2.2) of any response should perform or assign to appropriate members of the Command or General Staffs:

- Provide response direction;
- Coordinate effective communication;
- Coordinate resources;
- Establish incident priorities;
- Develop mutually agreed-upon incident objectives and approve response strategies;
- Assign objectives to the response structure;
- Review and approve IAPs;
- Ensure integration of response organizations into the ICS/UC;
- Establish protocols;
- Ensure worker and public health and safety; and
- Inform the media.

The modular organization of the ICS allows responders to scale their efforts and apply the parts of the ICS structure that best meet the demands of the incident. In other words, there are no hard and fast rules for when or how to expand the ICS organization. Many incidents will never require the activation of Planning, Logistics, or Finance/Administration Sections, while others will require some or all of them to be established. A major advantage of the ICS organization is the ability to fill only those parts of the organization that are required. For some incidents, and in some applications, only a few of the organization's functional elements may be required. However, if there is a need to expand the organization, additional positions exist within the ICS framework to meet virtually any need. For example, in responses involving responders from a single jurisdiction, the ICS establishes an organization for comprehensive response management. However, when an incident involves more than one agency or jurisdiction, responders can expand the ICS framework to address a multi-jurisdictional incident.

The roles of the ICS participants will also vary depending on the incident and may even vary during the same incident. Staffing considerations are always based on the needs of the incident. The number of personnel and the organization structure are totally dependent on the size and complexity of the incident. There is no absolute standard to follow. However, large-scale incidents will usually require that each component, or section, is set up separately with different staff members managing each section. A basic operating guideline is that the Incident Commander is responsible for all activities until command authority is transferred to another person.

Another key aspect of an ICS that warrants mention is the development of an IAP. A planning cycle is typically established by the Incident Commander and Planning Section Chief, and an IAP is then developed by the Planning Section for the next operational period (usually 12- or 24-hours in length) and submitted to the Incident Commander for approval. Creation of a planning cycle and development of an IAP for a particular operational period help focus available resources on the highest priorities/incident objectives. The planning cycle, if properly practiced, brings together everyone's input and identifies critical shortfalls that need to be addressed to carry out the Incident Commander's objectives for that period.

2.2 What is a Unified Command?

Although a single Incident Commander normally handles the command function, an ICS organization may be expanded into a Unified Command (UC). The UC is a structure that brings together the "Incident Commanders" of all major organizations involved in the incident in order to coordinate an effective response while at the same time carrying out their own jurisdictional responsibilities. The UC links the organizations responding to the incident and provides a forum for these entities to make consensus decisions. Under the UC, the various jurisdictions and/or agencies and non-government responders may blend together throughout the operation to create an integrated response team.

The UC is responsible for overall management of the incident. The UC directs incident activities, including development and implementation of overall objectives and strategies, and approves ordering and releasing of resources. Members of the UC work together to develop a common set of incident objectives and strategies, share information, maximize the use of available resources, and enhance the efficiency of the individual response organizations.

2.2.1 When should a UC be used?

The UC may be used whenever multiple jurisdictions are involved in a response effort. These jurisdictions could be represented by:

- Geographic boundaries (e.g., two states, Indian Tribal Land);
- Governmental levels (e.g., local, state, federal);
- Functional responsibilities (e.g., fire fighting, oil spill, Emergency Medical Services (EMS));
- Statutory responsibilities (e.g., federal land or resource managers, responsible party under OPA or CERCLA); or
- Some combination of the above.

2.2.2 Who is in a UC?

Actual UC makeup for a specific incident will be determined on a case-by-case basis taking into account: (1) the specifics of the incident; (2) determinations outlined in existing response plans; or (3) decisions reached during the initial meeting of the UC. The makeup of the UC may change as an incident progresses, in order to account for changes in the situation. The UC is a team effort, but to be effective, the number of personnel should be kept as small as possible.

Frequently, the first responders to arrive at the scene of an incident are emergency response personnel from local fire and police departments. The majority of local responders are familiar with NIIMS ICS and are likely to establish one immediately. As local, state, federal, and private party responders arrive on-scene for multi-jurisdictional incidents, responders would integrate into the ICS organization and establish a UC to direct the expanded organization. Although the role of local and state responders can vary depending on state laws and practices, local responders will usually be part of the ICS/UC.

Members in the UC have decision-making authority for the response. To be considered for inclusion as a UC representative, the representative's organization must:

- Have jurisdictional authority or functional responsibility under a law or ordinance for the incident;

- Have an area of responsibility that is affected by the incident or response operations;
- Be specifically charged with commanding, coordinating, or managing a major aspect of the response; and
- Have the resources to support participation in the response organization.

In addition, UC representatives must also be able to:

- Agree on common incident objectives and priorities;
- Have the capability to sustain a 24-hour-a-day, 7-day-a-week commitment to the incident;
- Have the authority to commit agency or company resources to the incident;
- Have the authority to spend agency or company funds;
- Agree on an incident response organization;
- Agree on the appropriate Command and General Staff position assignments to ensure clear direction for on-scene tactical resources;
- Commit to speak with "one voice" through the Information Officer or Joint Information Center (JIC), if established;
- Agree on logistical support procedures; and
- Agree on cost-sharing procedures, as appropriate.

UC members bring their authorities to the UC, as well as the resources to carry out their responsibilities. The UC members may change as the response transitions out of emergency response and into long-term cleanup. Members in a UC have a responsibility to the UC, and also to their agency or organization. These individuals in the response management system do not relinquish agency authority, responsibility, or accountability. The addition of a UC to the ICS enables responders to carry out their own responsibilities while working cooperatively within one response management system. Under the NCP, the UC may consist of a pre-designated OSC, the state OSC, the Incident Commander for the RP, and the local emergency response Incident Commander.

Generally, for spills on federal lands or resources, federal land and resource managers have authorities and responsibilities comparable to those of local and state responders and federally recognized Indian tribes. For this reason, federal land and resource managers should be invited to participate in the UC for spills on federal lands and resources under their control. Similarly, for incidents on tribal lands of federally recognized Indian tribes, a representative from the Indian tribe must be invited to participate in the UC.

2.2.3 How does the UC make decisions?

The UC is not "decision by committee." The principals are there to command the response to an incident. Time is of the essence. The UC should develop synergy based on the significant capabilities that are brought by the various representatives. There should be personal acknowledgement of each representative's unique capabilities, a shared understanding of the situation, and agreement on the common objectives. With the different perspectives on the UC comes the risk of disagreements, most of which can be resolved through an understanding of the underlying issues.
Contentious issues may arise, but the UC framework provides a forum and a process to resolve problems and find solutions. If situations arise where members of the UC cannot reach consensus, the UC member representing the agency with primary jurisdiction over the issue would normally be deferred to for the final decision. If this approach does not work, the RRT may be called on to serve as a forum where differences can be thoroughly discussed and to assist in resolving the disagreement.

The bottom line is that the UC has certain responsibilities as noted above. Failure to provide clear objectives for the next operational period means that the Command function has failed. While the UC structure is an excellent vehicle (and the only nationally recognized vehicle) for coordination, cooperation, and communication, the duly authorized representatives must make the system work successfully. A strong Command – a single Incident Commander or a UC – is essential to an effective response.

Each UC member may assign Deputy Incident Commander(s) to assist in carrying out Incident Commander responsibilities. UC members may also be assigned individual legal and administrative support from their own organizations.

2.2.4 What if your agency is not a part of the UC?

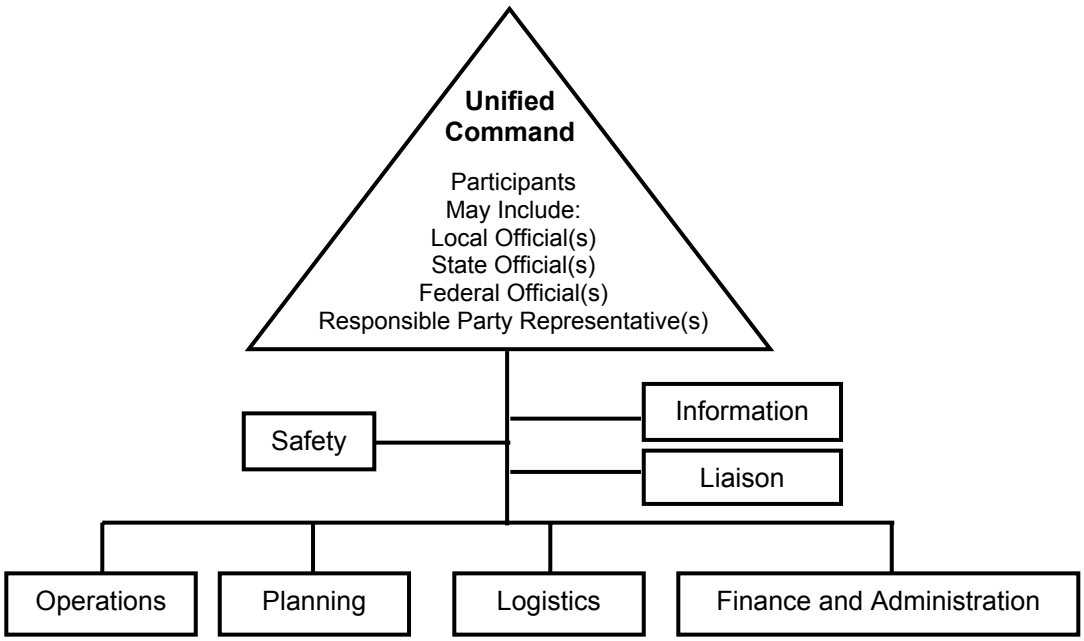
To ensure that your organization's concerns or issues are addressed if your agency is not represented within the UC, your organization should assign representatives to:

- Serve as an agency or company representative;
- Provide input to your agency or company representative, who has direct contact with the Liaison Officer;
- Provide stakeholder input to the Liaison Officer (for environmental, economic, or political issues);
- Serve as a Technical Specialist in the appropriate section; and/or
- Provide input to a UC member.

2.3 What is the Relationship between an ICS and a UC?

An ICS may be expanded to include a UC for complex responses, which often require multi-agency resources from the local, state, and federal levels. When it becomes necessary to establish a UC, the UC replaces the Incident Commander function and becomes an essential component of an ICS. In this way, the UC provides the organizational management tool to facilitate and coordinate the effective involvement of the various agencies; it creates the link between the organizations responding to the incident and provides a forum for these agencies to make decisions with which all responders can agree. Figure 2 on the next page shows the relationship between a UC and an ICS.

Figure 2 — Relationship between ICS and UC



The decision to include a UC will be based in large part upon the level of the response and the need for additional resources to respond effectively. It is important to remember that ICS/UC should be viewed as a response tool, not a response rule. The ICS/UC organization adheres to a "form follows function" philosophy. In other words, the organization at any given time should reflect only what is required to meet planned tactical objectives. Similarly, while an ICS will generally include the components identified in Figure 2, the ICS/UC response management structure does not attempt to prescribe a specific item-by-item functional description of where particular organizations or individuals fit within a single response structure for a given response. Along those lines, the establishment and administration of an ICS/UC should never detract from response efforts. In the early stages of a response, it may be necessary to commit the limited number of response personnel to field operations and scale back less critical ICS/UC administration procedures until more assets and resources become available.

Ideally, an ICS/UC should allow for information sharing both horizontally and vertically throughout the response organization, allowing a multi-jurisdictional response to be conducted effectively. However, horizontal and vertical information-sharing does not always work, because although the UC integrates different parties, the parties are not always integrated below the UC. This problem has surfaced in exercises and incidents. For example, although an RP is in the UC, the RP may not necessarily be involved in the ICS sections (e.g., Planning and Operations). The decision to include the RP in the UC may, in part, depend on its relationship with the members of the ICS. For ICS/UC to work effectively, all parties participating in the response need to be integrated throughout the response, not just in the UC. However, this does not mean that each agency should have representatives in each section, only that the responders need to be working together within and throughout the sections.

Furthermore, in many responses, incident-specific issues emerge that have a tendency to dominate the response effort and have a large effect on its eventual outcome. These aspects of a response could include salvage operations, criminal investigations, responder safety, etc. In situations such as these, the ICS must be flexible enough to allow these concerns to be addressed at the appropriate functional level and create an open dialogue between the UC and the section/branch that is handling the issue. For example,

when salvage issues become the focal point of a response effort, it is important that the UC have access to correct salvage support and information.

2.3.1 What are the Advantages of an ICS/UC?[10]

An ICS led by a UC has been used to manage local, state, and federal responses to complex multi-agency, multi-jurisdictional incidents. The following is a list of the advantages of an ICS/UC:

- Uses a common language and response culture;
- Optimizes combined efforts;
- Eliminates duplicative efforts;
- Establishes a single command post;
- Allows for collective approval of operations, logistics, planning, and finance activities;
- Encourages a cooperative response environment;
- Allows for shared facilities, reducing response costs, maximizing efficiency, and minimizing communication breakdowns; and
- Permits responders to develop and implement one consolidated IAP.

ICS/UC and Weapons of Mass Destruction (WMD)

In May 2000, several NRT member agencies participated in a major WMD exercise, called TOPOFF (Top Officials). TOPOFF was designed to assess the nation's crisis and consequence management capabilities to respond to geographically dispersed terrorist threats and acts.

The advantages of using ICS/UC at the incident site were evident during this complex, multi-agency, multi-jurisdictional exercise. As a result, the NRT recommended to Congress via the Department of Justice Exercise Observation Report that the federal government should adopt the NIIMS ICS/UC system as the standard response management system at incident sites, including WMD incidents.

The ICS/UC structure outlines responsibilities and functions, thereby reducing potential conflicts, and improving information flow among all participating organizations. The ICS maintains its modular organizational structure, so that none of the advantages of the ICS are lost by the introduction of a UC.

3. HOW DO RESPONDERS PREPARE FOR ICS/UC IMPLEMENTATION?

The key to successful implementation of an ICS/UC is planning and exercising at the regional and area levels. Practice using an ICS/UC prior to an incident will help responders understand their roles and responsibilities and prepared them to work together in the ICS. According to the NCP, the area contingency planning process, which brings together appropriate representatives from local, state, and federal agencies to enhance contingency planning, is the forum for working out the details of how the ICS will be applied in each area. When responders understand each other's roles and responsibilities and have a plan for working together, they are more likely to be able to reach consensus on response strategies and tactics. The OSC and the Area Committee are responsible for developing, adopting, and implementing a response management system, such as ICS/UC, through the Area Contingency Plan (ACP). Use of a NIIMS-based ICS/UC as the model for response management in the ACP can be helpful in ensuring an effective response.
To be most effective, there are four keys to implementing an ICS with a UC.[11]

[10] Texas General Land Office, Oil Spill Prevention and Response Division, "ICS Unified Command" video, 1995.

[11] Ibid.

Learn. The NRT encourages all responders to learn ICS/UC. The better it is understood, and the more familiar it is, the easier it will be to form a common structure when demanded by an incident.

Plan. How the ICS/UC will be implemented in varying situations should be decided well in advance of an incident. The ACP process should be used to identify roles and responsibilities of the various participants during different response scenarios.

Start early. As soon as two organizations are determined to have responsibility for, or in, a response, an ICS/UC should be implemented.

Practice. Periodic training and drills are crucial to providing training and role-playing opportunities. To maintain proficiency, using ICS on smaller spills and non-spill events should be considered. Planners and responders at all levels need to understand the authorities and resources each response organization brings to a specific incident. When plans and procedures are understood, agencies can support each other effectively. However, each response results in new lessons learned, which necessitates continuing refinement of the procedures and processes, development of better methods, and meshing of agency needs and actions.

Memoranda of Agreement (MOA): Effective Planning Tools to Implement a Successful ICS/UC

Using a unique approach to ensure coordination and cooperation at the scene of an incident, the State of Wisconsin Department of Natural Resources (DNR) established an MOA with EPA Region V and the USCG 9th District for emergency response to discharges of oil and releases of hazardous substances occurring within their jurisdictions. The MOA acknowledges the respective authorities of local, state, and federal responders and stresses the importance of including local authorities in the UC. The MOA also advocates that roles and responsibilities of all involved parties be clearly defined well in advance of an incident by using the area, state, and regional contingency planning processes.

Because most responses that require an ICS with a UC will be multi-agency and may be multi-jurisdictional, all participating organizations must understand the complexities of coordination. The question is not "Who is in charge?" but "How can all responders work together for the best results?" The goal of an ICS is to enhance response efficiency by eliminating duplication of effort and lessening response time – and consequently response costs. The best way to reduce confusion and conflict is to anticipate problems and develop possible solutions. This requires scenario-based planning and exercises with constant communications and coordination among all participants, working together as a team.

The following is a list of elements that should be in place and documented in relevant plans well before an incident occurs for an ICS/UC to be effective:

- The structure must be formalized and accepted by all parties concerned;
- Specific ICS functions and responsibilities must be well defined;
- Individuals must be designated for each function and the reporting mechanisms defined and accepted. However, it is important to note that the scope and complexity of the incident will determine the extent of the organizational positions actually staffed;
- Establish a methodology for developing an Incident Action Plan (IAP) and Site Safety Plan;[12]
- The participating organizations must make a committed effort to respond as a team;[13]

[12] Title 40 CFR 300.150(a)
[13] Texas General Land Office, Oil Spill Prevention and Response Division, "ICS Unified Command" video, 1995.

- Contingency plans (including ACPs, facility and vessel response plans, and local emergency response plans) must address training and ensure familiarity with an ICS/UC;

- Relationships and interactions with entities outside the ICS but relevant to the NRS (e.g., RRT, natural resource trustees[14]) must be defined.

Each ACP should fully address and describe key organizational components of the NRS, such as the role of the RRT. Under OPA, the Area Committees are required to include local and state governments in the planning process and are encouraged to invite the private sector to participate. Because key participants differ from area to area, however, Area Committees must have flexibility to adapt the ICS/UC to be effective in each specific area.

The following items should be considered when developing ACPs particularly when considering the implementation of ICS:

- Jurisdictional responsibilities;
- Roles of all levels of government in the UC (e.g., local, state, and federal);
- Existing local, state, and federal laws, regulations, policies, and procedures;
- Financial agreements;
- Information dissemination;
- Communications;
- Training and exercising;
- Logistics;
- Potentially responsible parties;
- Response organization;
- NRS organizational components; and
- Lessons learned.

The ICS as described in the ACP should be sufficient to assist the OSC in directing, monitoring, and coordinating response efforts. Assuming that a significant discharge will tax and possibly overwhelm EPA, USCG, or other federal agency personnel in the region(s) in which the incident occurs, the ACP should plan to fully integrate other response resources into the ICS. In addition, the ACP should include a specialized "ICS expansion plan" that covers drastic changes in the size and/or scope of the response effort.

[14] Section 107(f)(2) of CERCLA (as amended by section 1006 of OPA) authorize state, federal, and Indian tribal trustees to act on behalf of the public to present a claim for and recover damages to natural resources injured by an oil spill or hazardous substance release. As part of this process, the natural resource trustees may conduct a natural resource damage assessment (NRDA), which can involve some data collection during emergency response. Section 300.135(j)(2) of the NCP requires the OSC to "coordinate all response activities with the affected natural resource trustees and, for discharges of oil…consult with the affected trustees on the appropriate removal action to be taken." The NCP also calls for the trustees to designate a lead administrative trustee to ensure coordination between response and NRDA activities. Thus, although NRDA activities are not carried out under the direction of the OSC, a means of coordination between the OSC and the trustees needs to be established as part of pre-incident planning. For more information about natural resources trustees and ICS/UC, see the NRT fact sheet titled, "Federal Natural Resource Trustees and the ICS/UC," available on the NRT web site at *http://www.nrt.org*.

3.1 What Are the OSC's Planning Roles and Responsibilities?

Under the NCP, OSCs have the responsibility to oversee development of the ACP in the area of the OSC's responsibility. The NCP states that the development of ACPs should be accomplished in cooperation with the RRT, and designated local and state representatives, as appropriate.[15] In both contingency planning and spill response, the OSC is responsible for coordinating, directing, and reviewing the work of other agencies, Area Committees, RPs, and contractors to ensure compliance with the NCP and other plans applicable to the response.[16]

In developing the ACP, the OSC must coordinate with state and local response organizations, including those represented on the State Emergency Response Commissions (SERCs) and Local Emergency Planning Committees (LEPCs).[17] It is the OSC's and Area Committee's responsibility to ensure that the ACP provides for a well coordinated response that is integrated and compatible, to the greatest extent possible, with all appropriate response plans of local, state, and non-federal entities, and especially with SARA Title III local emergency response plans. The OSC should also include, to the extent possible, a discussion of relationships with potential RPs. In addition, the OSC must periodically conduct drills of spill removal capability, including fish and wildlife response capability, without prior notice, in areas for which ACPs are required and under relevant tank vessel and facility response plans.[18] In the event of a significant discharge, OSCs should implement the ICS specified in the ACP.

3.2 What Are the RRT's Planning Roles and Responsibilities?

As outlined in § 300.115 of the NCP, regional planning and coordination of preparedness and response actions are accomplished through the RRT. The RRT agency membership parallels that of the NRT, but also includes state and local representation. The RRT provides the appropriate regional mechanism for development and coordination of preparedness activities before a response action is taken and for coordination of assistance and advice to the OSC during response actions. As appropriate, the RRT also provides guidance to Area Committees to ensure inter-area consistency and consistency of individual ACPs with the Regional Contingency Plan and the NCP.

The two principal components of the RRT mechanism are a standing team and an incident-specific team. (See Chapter 4 for more information about the incident-specific RRT.)[19] The standing team consists of designated representatives from each participating local and state government and federal agency. There are 13 standing RRTs, one for each of ten federal regions, and additional RRTs for Alaska, the Caribbean, and the Pacific Basin. The role of the standing RRT includes providing regional access to communications systems and procedures, planning, coordination, training, and evaluation. It also includes coordination of Area Committees for these functions in areas within their respective regions, as appropriate.

4. HOW DO RESPONDERS IMPLEMENT ICS/UC DURING AN INCIDENT?

4.1 What Are the OSC's Response Roles and Responsibilities?

[15] Title 40 CFR 300.120(e).
[16] Ibid.
[17] Title 40 CFR 300.210.
[18] Title 40 CFR 300.212.
[19] For more information on the RRT, please see the "*Role of the RRT Factsheet*," which can be found at www.nrt.org.

The use of the ICS/UC as a management tool does not relieve the OSC of her or his obligation to direct, monitor, and coordinate response actions. The OSC in every case retains the authority to direct the response, and must direct responses to discharges of oil that pose a substantial threat to the public health or welfare of the United States. In most situations, however, the OSC will choose to monitor the actions of the RP and/or local and state governments and provide support and advice where appropriate. It is the OSC's responsibility to explain the OSC's authority at a response during both the planning and response phases. The ICS/UC also is a useful mechanism in obtaining input from other responders to help the OSC in directing and coordinating response efforts.

The OSC should either implement an ICS at the beginning of a response, or be prepared to integrate into an existing, properly functioning, ICS during a response. It is important to recognize that local and/or state responders may already have established an ICS when the OSC arrives on-scene. In many cases, the OSC will fill multiple positions within the ICS organization. An OSC also may elect to establish any of the functions of an ICS by assigning responsibility to another individual.

4.2 What Takes Place in the Initial UC Meeting?

Open and early discussion among members of the UC is critical to ensuring effective implementation of the NRS and use of the ICS/UC when an incident occurs and plans need to be implemented. The establishment of a UC must begin with an initial meeting of the incident commanders and their staffs from each of the involved jurisdictions. During this meeting – which should be brief – the incident commanders must come to consensus on priorities, a collective set of incident objectives, an overall strategy, and selection of a UC spokesperson before they can effectively work together to carry out the response.

The initial meeting also will provide an opportunity for the incident commanders to establish a Joint Information Center (JIC), as needed.[20] In addition, if not established in pre-planning activities, the incident commanders must use the initial meeting as an opportunity to determine the appropriate roles and responsibilities of all representatives involved in the ICS (e.g., local and state governments, and the RP). This conversation will help establish the membership of the UC.

Effective planning can facilitate assembly and conduct of the initial UC meeting. The responsibilities discussed above should be preplanned to the greatest extent possible. Although an initial meeting is critical for ensuring the effective integration of all responders into the ICS/UC, the steps involved in the UC meeting (as identified below) may have to be revisited periodically as information on the incident or the demands of the incident change. These meetings will provide a private opportunity for the incident commanders to speak openly and honestly about their priorities, considerations, and concerns. However, once participants in the UC leave this meeting, they must speak with one voice.

4.2.1 Step 1 – Set Priorities and Objectives

For the UC to work, each participant must be committed to working together to solve a common problem. Each responding agency will have individual objectives to carry out. In addition, the primary objectives of each responding agency are established under the NCP as "national response priorities," which state:[21]

[20] The NRT has developed a generic JIC model that describes how to structure a JIC to conduct crisis communications during emergency responses and non-emergency events. To view or download an electronic copy of the JIC model, please visit www.nrt.org.
[21] Title 40 CFR 300.317.

- Preserve the safety of human life;
- Stabilize the situation to prevent the event from worsening;
- Use all necessary containment and removal tactics in a coordinated manner to ensure a timely, effective response that minimizes adverse impacts to the environment; and
- Address all three of these priorities concurrently.

However, each responding entity will likely have other significant priorities requiring consideration, which might include the following factors:

- Maintaining business survival;
- Minimizing response costs;
- Maintaining or improving public image;
- Minimizing economic or tourism impacts;
- Minimizing environmental impacts;
- Evaluating prospects of criminal prosecution; and
- Meeting certain reasonable stakeholder expectations.

Understanding all the issues facing the UC participants is important in any negotiation. Because consensus must be reached for the UC to be effective, it is critical that the UC engage in coordination whenever necessary. If consensus cannot be reached, the RRT can be used as a forum for achieving consensus. The incident-specific RRT provides a mechanism for the OSC to seek assistance and conflict resolution from the leadership of his or her own agency, other federal agencies, and local and state governments. To do this, the RRT can convene either by telephone or in person.

4.2.2 Step 2 – Present Considerations

At the onset of the initial meeting, UC members have an obligation to raise and discuss honestly what each response organization can provide in terms of authorities, equipment, skills, and experience, including their response capabilities. All incident commanders must be free to speak openly with the other members of the UC about their constraints or limitations, whether practical or political in nature, because these constraints may have an impact on how the UC's objectives can best be achieved.

4.2.3 Step 3 – Develop a Collective Set of Incident Objectives

The planning process for the UC is similar to that used for a single jurisdiction or agency incident. However, because each agency will bring its own set of objectives and considerations to the response, the UC must decide upon a collective set of incident-specific objectives — to identify what the UC as a whole needs to accomplish — before an overall response strategy can be developed. To be effective, these objectives should be specific, measurable, assignable, reasonable, and time-related. The UC must come to consensus on a set of general objectives that can then be documented to provide focus for the response organization. This process includes establishing and agreeing upon acceptable priorities.

4.2.4 Step 4 – Adopt an Overall Strategy

Strategy is the development of policies and plans to achieve the objectives for a response. If the UC knows exactly how to accomplish an objective, it should specify the strategy. Because there are frequently multiple possible strategies that would accomplish the same objective, the UC staff will often ask the Planning Section to recommend strategies for later UC approval. This allows for better input and discussion from the responders, and also reduces meeting time for the incident commanders.

4.2.5 Step 5 – Select a UC Spokesperson

Frequently, the UC will establish a JIC and designate a single spokesperson. The spokesperson is typically a member of the UC, and serves as a point of contact and a single voice of the members of the incident management team at external and internal briefings. The spokesperson may change during the course of an incident as the situation develops. For example, a different agency may designate a spokesperson if it has more expertise in a particular area at a certain time. In addition, different departments within the same agency could designate a spokesperson at different times during the same incident, as appropriate.

5. CONCLUSION

The ICS/UC is designed to be flexible in order to lend itself to integration at the decision-making and operational levels, and to expansion and contraction when needed. Complex and/or multi-jurisdictional incidents will call for an ICS led by a UC. A commitment to cooperation by all involved parties is necessary for the creation of an improved organizational and operational process.

ICS/UC is an important concept to practice as part of response exercises and include in local and area contingency plans. Such exercising and planning will facilitate coordination and cooperation between local, state, federal, and private party responders when the ICS/UC is implemented at an incident, and ensure that all responders are able to work together effectively to protect human health and the environment.

Appendix A: Key ICS Terms

COMMAND/INCIDENT COMMANDER – The Command Function of an Incident Command System (ICS) is responsible for directing and/or controlling resources by virtue of explicit legal, agency, or delegated authority. The individual responsible for the overall management of the response is called the Incident Commander. For responses under the National Response System (NRS), the pre-designated On-Scene Coordinator (OSC) generally assumes the role of Incident Commander. The Command Function sets objectives and priorities and defines the ICS organization for the particular response. Even if other positions are not assigned, the Incident Commander will always be designated. In some instances, the Unified Command (UC) may designate a spill manager to direct the response and coordinate the activities of the functional managers. Depending on the magnitude, complexity, and impact of the discharge or release, the Command Function may be further divided in staff elements.

COMMAND STAFF – The OSC may appoint a person or persons to be in charge of specific staff functions including the Information, Safety, and Liaison functions. These tasks also may include spill management, public and Congressional affairs, media relations, and legal issues, among others. The members of the Command Staff report directly to the Incident Commander and will support, advise, and keep the other key functional managers informed.

The Incident Commander may appoint functional managers responsible for specific tasks (operations, planning, logistics, and finance and administration). These tasks remain the responsibility of the Incident Commander unless they are delegated to someone else. The tasks are as follows:

- **OPERATIONS** – Operations Staff direct tactical actions to meet incident objectives, administer staging areas, and identify and utilize resources.
- **PLANNING** – Planning Staff collect, evaluate, and display incident information; prepare an action plan and health and safety plan; evaluate disposal options; plan for demobilization; and maintain documentation.
- **LOGISTICS** – Logistics Staff provide adequate service and support to meet incident or event needs, including supplies, first aid, food, communications, ground support, and transportation and vehicle maintenance.
- **FINANCE/ADMINISTRATION** – Finance and Administration Staff track incident costs, personnel and equipment records, claims, and procurement contracts; and provide legal expertise.

GENERAL STAFF – The group of incident management personnel comprised of: the Incident Commander or Unified Command, the Operations Section Chief, the Planning Section Chief, the Logistics Section Chief, and the Finance/Administration Section Chief.

INCIDENT ACTION PLAN (IAP) – Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The Plan may have a number of forms as attachments (e.g., safety plan).

JOINT INFORMATION CENTER (JIC) – A facility established within or near the incident command post where the information officer and staff can coordinate and provide information on the incident to the public, media, and other agencies. The JIC is normally staffed with representatives from the federal OSC, state OSC, and RP.

OPERATIONAL PERIOD – The period of time scheduled for execution of a given set of operation actions as specified in the IAP. Operational Periods can be various lengths, usually not over 24 hours. The Operational Period coincides with the completion of one planning cycle.

UNIFIED COMMAND (UC) – A unified team that manages an incident by establishing a common set of incident objectives and strategies. This is accomplished without loss or abdication of agency or organizational authority, responsibility, or accountability.

Appendix B
History of NRT Efforts in ICS/UC Implementation

The first efforts by the NRT to address response management began following the *Exxon Valdez* oil spill in 1989. The spill was the largest in U.S. history and tested the abilities of the government and the private sector to respond to a disaster of such magnitude. Many factors, including the lack of an effective response management structure, complicated the cleanup efforts following the spill and tested existing response plans for dealing with such an event. These finding were made by the NRT in its report to the President of the United States, which was prepared in the weeks following the incident (see www.nrt.org for the complete report).

In the aftermath of the *Exxon Valdez* incident, Congress passed the Oil Pollution Act of 1990, which provided new requirements for contingency planning and called for revision of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 40 CFR part 300). The NRT Report to the President on the *Exxon Valdez* oil spill identified several lessons learned that illustrated the need to promote the use of a clear response management system that utilized a "team approach." It called for a coordinated system that effectively utilizes the resources of local, state, and federal governments. It also recommended that the NCP be reviewed to "determine the most appropriate organizational structure for catastrophic spills." The NCP was subsequently revised to reinforce that "the basic framework for the response management structure is a system (e.g., a unified command system), that brings together the functions of the federal government, the state government, and the responsible party to achieve an effective and efficient response, where the OSC [On-Scene Coordinator] retains authority."

In addition to the lack of clear response management and command coordination, response assets (personnel and equipment) could not be effectively integrated into the response organization during the *Exxon Valdez* response because many of the participating response organizations utilized differing response structures or systems. Over time, the NRT came to advocate the National Interagency Incident Management System (NIIMS)-based ICS structure. This system, which consists of five functions (command, operations, planning, logistics, and finance/administration), was the response structure originally developed to combat wildfires at the local level. It has been increasingly accepted that the use of a NIIMS-based ICS together with UC can greatly improve response efforts.

The following examples cite the increasing acceptance and promotion of ICS/UC within NRT member agencies:

- The use of ICS/UC in response to the attacks on the World Trade Center and the assistance provided by NRT agencies.

- The USCG has adopted the National Interagency Incident Management (NIIMS) Incident Command System (ICS) as its standard response management system for all responses. To ensure that ICS was fully integrated into Coast Guard policy and doctrine an array of initiatives were undertaken: (1) the development of an implementation and training plan that set minimum training standards and a timeline for implementation of ICS; (2) a National Incident Command Protocol was established in the event an incident's size or complexity requires senior executive-level response coordination such as a Spill of National Significance; (3) two Incident Management Assist Teams were established to provide command and control surge capability to Coast Guard Incident Commanders; and, (4) a multi-contingency Incident Management Handbook was developed to provide ICS doctrine to field responders.

- EPA is in the process of implementing an agency-wide policy on ICS/UC, which states that an ICS/UC based on the concepts of NIIMS ICS is the preferred response management system for use by EPA in an emergency response to significant incidents, especially for complex, multi-agency incidents. EPA Regions have the flexibility to adopt those portions of NIIMS ICS or other response systems that are best suited to their Region when carrying out their responsibilities within the National Response System. The preferred response management system must be specified in the applicable Area Contingency Plan. EPA OSC are encouraged to integrate into any response management system, which is adequately addressing the major issues associated with discharges or releases. To fully implement the ICS/UC policy, EPA will (1) train its OSCs to an advanced level of NIIMS ICS, (2) ensure that regions and areas define their ICS/UC response management organization and incorporate it into their plans (e.g., Area Plans and Regional Contingency Plans), and (3) exercise the plans regularly to confirm the effectiveness of the response management system identified in the Regional plan along with other objectives.

- The United States Fire Administration (USFA), in conjunction with the Federal Emergency Management Agency (FEMA) and the Federal Bureau of Investigation (FBI), is developing a conference series for first responders on the application of ICS/UC.

- The Justice Department is preparing video tapes on ICS and UC to be distributed nationally to local responders.

ICS/UC Products Developed by the NRT

Following the completion of the first ICS/UC Technical Assistance Document published by the NRT in 1996, the NRT began developing several additional products to further elaborate on particular issues related to ICS/UC. Each of these products is available electronically at www.nrt.org and a summary of each is provided below:

- **ICS/UC PowerPoint Presentation** – this presentation was developed to introduce the concepts of ICS/UC, outline the assistance that can be provided by the federal On-Scene Coordinator, and provide an outreach tool to discuss multi-jurisdictional response.

- **Federal Natural Resource Trustees and the Incident Command System/Unified Command (ICS/UC)** – this fact sheet describes how federal natural resource trustees fit into ICS/UC; the resources and assistance Federal trustees can provide during response and preparedness activities; and where in ICS/UC the coordination link occurs between Federal trustee response and natural resource damage assessment (NRDA) activities. This includes appendices from the National Oceanic and Atmospheric Administration and the Department of the Interior addressing each agency's emergency response and NRDA activities, as well as resources for which each agency is responsible, authorities under which each operates programs relevant to response, and other relevant information.

- **ICS/UC Minimum Essential Training Elements** – this document identifies the minimum essential elements that should be considered in developing or evaluating ICS training for responders. Users should evaluate which of these elements are needed for their purposes. This document also contains a listing of NRT agencies and their policies regarding the use of an ICS and provides a compilation of sources of ICS training in the Federal government.

- **Joint Information Center (JIC) Model** - This model describes how to structure a JIC to conduct crisis communications during emergency responses and non-emergency events. This model is generic and can be adapted for use in a diverse range of responses likely to be performed by NRT member

agencies, ranging from a large multiple-agency, all-hazards response to a small single-agency, single-hazard response. This document is only available in Adobe PDF format.

- **NRT Training Recommendations on the Use of Incident Command System/Unified Command (ICS/UC) for Weapons of Mass Destruction (WMD) Incidents and Hazardous Materials Emergency Preparedness (HMEP) Grant Program Training Standards** – In October 2000, the NRT tasked the Training Subcommittee of the Preparedness Committee to begin efforts to assist local, state, and Federal responders to train, educate, advocate, and plan for the use of ICS/UC at response sites involving WMD. This action resulted from the NRT's recommendations to the Justice Department concerning lessons learned from Exercise TOPOFF 2000, the largest domestic counter-terrorism exercise in the U.S. to date. As a first step, the NRT has approved training recommendations on use of ICS/UC for WMD incidents. These recommendations will be included in the Special Topics section of the 2002 Hazardous Materials Emergency Preparedness (HMEP) Grant Program. The recommendations include:

  - The ICS/UC structure recommended by the NRT be used by response personnel when responding to hazmat incidents, oil spills, and intentional releases, including those involving the use of WMD;

  - Federal responder ICS/UC training programs be developed or adapted, and all federal personnel who may participate in the response to such incidents be required to take initial and annual refresher training course in ICS/UC; and

  - Agencies not using ICS/UC in their response efforts should nevertheless be trained in ICS/UC to ensure effective response coordination with those agencies that use ICS/UC.

Appendix C: ICS/UC at Work

Section 1 – EPA Example of ICS/UC

U.S. EPA Region III Professional Food Systems Site Emergency Response
Bedford, Bedford County, Virginia
March 19 - 24, 2000

RESPONSE SUMMARY

This summary of the response to the Professional Food Systems (PFS) release of anhydrous ammonia in the Bedford area of the Commonwealth of Virginia provides an example of successful and flexible use of an Incident Command System/Unified Command (ICS/UC) at a typical response.

PFS, the potentially responsible party (PRP), is located in an industrial park that lies within a half mile of a residential area. The release of anhydrous ammonia at the PFS site was the result of a leak in the check valve on an accumulator assembly of an anhydrous ammonia-based refrigeration system at the meat storage and processing facility. Approximately 4,000 - 5,000 pounds of anhydrous ammonia contained in the refrigeration system were leaking at four to five pounds per hour. An unknown quantity of anhydrous ammonia was released from the valve into the PFS building and outside environment.

The leak was initially identified by a mechanical contractor on March 19, 2000, as PFS personnel were performing a repair operation on the refrigeration unit. The mechanical contractor and PFS personnel could not control the leak and contacted local responders. The Bedford Volunteer Fire Company and the Roanoke Valley Regional Hazardous Materials Response Team (the Regional Hazmat Team) responded to the scene. In addition, the Bedford County Hazardous Materials Response Team responded to assist the fire company, and the Bedford County Director of Public Safety was on scene. The leak was slowed by the initial responders, but was not completely contained due to difficulties presented by the configuration and limited space around the leaking valve (as well as significant concentrations of ammonia gas accumulating in the building). The Virginia Department of Emergency Services (VA DES) responded to the incident, and the Virginia Emergency Operations Center (VA EOC) requested assistance from EPA Region III the following morning because the need for technical expertise was immediate and additional response resources were necessary.

The federal On-Scene Coordinator (OSC) initiated response activities from off-site in Philadelphia by arranging for technical expertise from the EPA Environmental Response Team (ERT) to be available for chemical and engineering advice. The federal OSC contacted the U.S. Coast Guard Atlantic Strike Team (USCG-AST) in Fort Dix, New Jersey, and mobilized a Site Assessment and Technical Assistance (SATA) response team capable of Level A entry and ammonia monitoring capability [Level A protection is required when the greatest potential for exposure to hazards exists, and when the greatest level of skin, respiratory, and eye protection is required].

The federal OSC discussed refrigeration systems and likely response strategy with EPA chemical safety personnel, and met ERT and advance USCG-AST members in Chester County, Pennsylvania. The federal OSC arranged for a charter flight to the vicinity of the scene to allow for preparation and strategy meetings en route. Upon arrival on March 20th, the federal OSC met with the VA DES and the Bedford Volunteer Fire Company Incident Commander (IC) to establish the federal OSC's role in the Unified Command (UC). Working through the UC, the federal OSC also immediately identified roles and positions for the USCG-AST and contractor resources that he brought to the response and integrated these federal resources into the response organization.

The Regional Hazmat Team and the USCG-AST shared the majority of the hot zone and decontamination operations, with the USCG-AST working the night shift and the Roanoke team working the day shift. After the initial response activities were conducted, SATA also was divided into similar shifts to cover air monitoring, documentation, hot zone monitoring, and other work assignments. USCG-AST personnel also acted as Safety Officers for the response and prepared a Site Safety Plan. ERT assisted in developing plans to implement the UC's strategy in the Planning Section of the ICS. Throughout the response, the federal OSC worked with the other key UC representatives to develop and implement a response strategy.

The federal OSC directed the USCG-AST to make entries into the building to determine the concentration of ammonia within the building and to isolate the pump room from the remainder of the building. SATA was tasked by the federal OSC to perform perimeter (within 100 yards of the facility) and off-site air monitoring. No ammonia levels above 3ppm were measured at a distance of 50 yards from the building. The USCG-AST and the Regional Hazmat Team made several Level B entries with the PRP's mechanical subcontractor in order to evaluate the condition of the refrigeration system. The lack of documentation and unknown positioning and integrity of many of the valves made it difficult to isolate the system. SATA was commissioned to develop a device, later termed the "gizmotron," that converted some of the anhydrous ammonia into ammonium hydroxide (by spraying water on the leaking valve). With the "gizmotron" in place, the USCG-AST, with the mechanical subcontractor's input, was able to tap into the system and bubble the remaining ammonia through the water in Baker tanks provided by the RP contractor. Once the release was stabilized, the UC began to focus on removing the ammonia from the facility in a controlled manner.

VA DES, ERT, and SATA were requested to complete Computer-Aided Management of Emergency Operations (CAMEO) air dispersion modeling to determine if the isolated cold storage rooms could be vented. Meteorological conditions were obtained from the USCG-AST weather station and the VA DES command center. Approximately 14 potential scenarios were developed, modeled, and evaluated. Prior to ventilation operations, area maps were provided by local officials, which were used to identify potential downwind receptors. Wind vector profiles were identified to determine the safest wind directions in the event of a release operation.

During the UC meetings, plans were made to ventilate the building using existing roof fans and auxiliary positive pressure ventilation fans. Due to the close proximity of an elementary school, an agreement was made with local officials to ventilate the lower level areas and perform all process manipulations between the hours of 4:00 p.m. and 6:00 a.m., to avoid a potential ammonia air release during school hours. Concentrated ventilation operations began at 11:30 p.m., March 21, 1999. The USCG-AST continually monitored wind direction using a weather station and the data were compared to the prepared maps during ventilation operations. The federal OSC maintained a thorough air-monitoring program through March 24, 1999, in order to ensure the safety and health of the public.

Once the ammonia system was drained, this ventilation plan proved to be very effective in lowering the ammonia level so Level C protected contractors could proceed into the facility to complete work and repairs on the refrigeration system. This also allowed U.S. Department of Agriculture (USDA) officials to inspect products in the facility, and for PFS to remove products deemed undamaged.

THE ROLE OF ICS/UC

ICS/UC is an effective response management tool for all sizes of spills and discharges. Additionally, the ICS/UC structure can be used in both formal and informal settings to best achieve the desired outcome of any response: safe, timely, and successful mitigation.

The Bedford incident presented several difficulties that immediately identified it as a more than routine emergency response: the ammonia release could not be stopped in a timely manner, and the response

teams entering the plant to control the dangerous gas levels required Level A personal protective equipment. These issues, coupled with the complexity of multi-agency involvement in the incident, suggested the need for ICS/UC structure. However, the size and likely short-term duration of the Bedford incident suggested that ICS/UC would best be informally applied. Few ICS forms or formalities were applied, but the basic concepts of ICS were used to allow the UC to effectively manage the diverse responding agencies and effectively implement their strategies. The Incident Command recognized the value of the ICS/UC structure and allowed that structure to guide and facilitate the response. Responders decided that they would use enough of the ICS/UC structure to assist them without allowing it to consume the response effort.

The ICS established in response to the Bedford incident was initiated by the local responders. When the federal OSC arrived on-scene, he merged into the existing structure, which was already functioning properly. The federal OSC fostered use of local authorities' knowledge, education, experience, and planning in establishing and maintaining an effective ICS/UC.

Unified Command

The federal OSC, the state Hazardous Materials Officer, the local IC, and a representative of PFS functioned as the UC. The members of the UC changed over time, but local, state, and federal officials always shared command responsibilities. Since local, state, and federal agencies each shared responsibilities in and provided assets to the response, each organization benefited from its presence in the UC. Additionally, because the primary role of the site entry team shifted between state and federal assets during a 24-hour cycle, the coordination between and the presence of the federal OSC and state OSC in the UC was necessary to ensure seamless operations. The PRP representative provided the command with contractor support for site expertise and recovery operations.

The following is list of actions taken by the UC at the Bedford incident, which contributed to an effective and successful response:

1. Early and continued presence of the USCG-AST, the EPA ERT, and the SATA team provided continuity throughout the response. The expertise, knowledge, and additional resources they made available were invaluable to the successful management of the response.

2. Early coordination with local, state, and federal response teams played a key role in the success of mitigation efforts by giving the federal OSC rapid access to a large supporting team and assisting in the resolution of many problems.

3. Having representatives from all appropriate levels of government in the UC expedited coordination efforts with other agencies at all levels.

4. Close and early coordination with the ERT and SATA team ensured that efforts were not duplicated during air quality monitoring, and their knowledge assisted EPA enforcement officials when working with the PRP. Representatives from the ERT and SATA team helped the UC achieve an integrated release response and risk assessment and effectively address the concerns of the public.

Command Staff

The Command Staff included a representative from the USCG-AST (Site Safety Officer) and the Chief of the Bedford Police Department (Information Officer and Liaison Officer). The USCG-AST representative shared Safety Officer responsibilities with designated representatives of the Regional Hazmat Team during their shift. The Chief of the Bedford Police Department provided the command with the best liaison to the affected community. Thus, communications and briefings were handled by the local jurisdiction.

Operations Section

Senior members of the Bedford Volunteer Fire Company, the Regional Hazmat Team, and the USCG-AST each formed the nucleus of the Operations Section of the ICS. Depending upon the shift, a designee from the Regional Hazmat Team or the USCG-AST directed building entry operations in conjunction with support from numerous local agencies. The senior official representing the local fire department and emergency medical services assets directed personnel to fulfill the many supporting functions. The federal OSC and the state OSC developed common response objectives and shared approval responsibilities for operational elements depending upon the lead agency conducting work in the Operations Section.

Planning Section

Members of the EPA ERT, VA DES, USCG AST, and EPA's SATA contractor formed the entire Planning Section. These individuals collected and documented information derived from the entry operations and relayed this information to the Command. Status of ammonia concentration, wind direction, modeling iterations, and the results of numerous entries into the building were forwarded to the UC. This information allowed the UC to develop objectives for the following four to six hours. When ammonia levels were found to exist at levels that would allow for work in lower levels of protection, the UC could decide to allow PRP contractors into certain sections of the building to move their products to safety. The PRP representative in the UC facilitated this decision by prioritizing critical products, areas of the facility requiring activity, and providing direction to PRP personnel.

The existence of a Planning Section also enabled the UC to forecast appropriate time periods for venting the ammonia from the facility. Since a representative of the local fire department was part of the UC and the local police chief served as Liaison to the community, the UC was able to quickly work out a solution for venting the ammonia that would result in minimal impact. The UC was able to provide the community with accurate and timely information derived from the SATA team, USCG AST, VA DES, and ERT efforts in planning functions.

CONCLUSION

The ICS/UC established at the Bedford incident was a typical ICS/UC that will likely exist for most, if not all, of EPA's response activities and assistance efforts with state and local jurisdictions. The cooperative nature of the UC immediately resulted in relief for state and local resources at the end of long shifts. This was an incident objective that resulted in immediate abatement results and reduced the ongoing projected incident duration. In addition, the sharing of responsibilities ensured that the full attention of the response community was focused at all times. Standard ICS forms and wire diagrams were not employed due to the limited projected duration of the response, the familiarity and good working relationship between EPA and VA DES and their assets, and the observable degree of professionalism and cooperation of the local response community. Although the responders felt that much of the ICS

formality would be unnecessary at the Bedford incident, many of the tools and benefits of the ICS/UC structure were used, forming the foundation of the response management employed by the UC. Because the responders understood the basic principles, concepts, and features of ICS/UC and ensured that key personnel understood their roles and functions within the response management structure, management of the Bedford incident was able to forgo much of the formality typically associated with NIIMS ICS/UC.

The co-location of local, state, federal, and PRP representatives in a single command post and the proximity of all ICS sections and response personnel ensured that command decisions and field-derived information were easily communicated and implemented.

The ICS/UC implemented at the Bedford incident release was the key to successful mitigation operations. The ICS/UC allowed the UC to effectively manage and coordinate an emergency response that included the participation of approximately 30 local, state, and federal agencies. The timely and frequent coordination of all members of the response team with the PRP and local representatives greatly enhanced the reduction of anhydrous ammonia released and provided a more efficient and cost-effective response. The success of the clean-up operation, and the lack of negative publicity that resulted, supports the premise that all levels of government can function efficiently within a group.

The table on the next page lists the agencies and organizations that participated in the response and a brief description of their duties.

Table 1 - Participating Agencies and Duties Performed

Agency	Brief Description of Duties
Unified Command/Command Staff	
U.S. EPA Region III Removal Response Section	Provided the federal OSC who assisted in response activities as the federal representative of the UC; assisted the federal OSC in coordinating site activities; and provided chemical engineering assistance.
Commonwealth of Virginia Department of Emergency Services (VA DES)	Provided the State Hazmat Officer and assisted in response activities as the state representative (state OSC) of the UC.
Bedford, Virginia Volunteer Fire Company	Served as the initial IC and assisted in response activities as a local representative of the UC.
Forest, Virginia Volunteer Fire Company	Assisted in response activities as a local representative of the UC.
United States Coast Guard National Strike Force Atlantic Strike Team (USCG-AST)	Assisted EPA with health and safety, logistics, interior monitoring, and entry operations (also see Operations and Logistics Sections).
Roanoke Valley Regional Hazardous Materials Response Team	Daytime hazardous materials team provided health and safety, logistics, interior monitoring, and entry operations (also see Operations Section).
Bedford, Virginia, Police Department	Participated in UC; served as liaison to local resources; provided site security and a command post (also see Operations Section).
Professional Food Systems (PFS)	Assisted in response activities as the PRP representative of the UC.
Planning Section	
U.S. EPA Environmental Response Team (ERT)	Advised the federal OSC on actions taken during the response, and worked with SATA on running a CAMEO model for the response.
U.S. Department of Agriculture (USDA)	Inspected PFS' products that remained within the facility during the release.
Roy F. Weston Inc. Site Assessment Technical Assistance (SATA) Team	Provided technical support to the federal OSC, including air monitoring, documentation of activities, implementing CAMEO, and designing, building, and installing the "gizmotron" to control the release.
Operations Section	
United States Coast Guard National Strike Force Atlantic Strike Team, (USCG-AST)	Assisted EPA with health and safety, logistics, interior monitoring, and entry operations (see also Command Staff and Logistics Sections).

Agency	Brief Description of Duties
Roanoke Valley Regional Hazardous Materials Response Team	Daytime hazardous materials team provided health and safety, logistics, interior monitoring, and entry operations.
City of Bedford, Virginia	Provided a Fire/Building Inspector, and a Building and Code Official to supervise post-incident activities for local officials.
Bedford, Virginia, Police Department	Participated in UC; served as liaison to local resources; provided site security.
Virginia Fire Departments • Bedford • Franklin County • Evington • Smith Mt. Lake • Lyn/Dan Heights • Forrest • Stuartsville/Chamblissberg • Huddleston • Chamblissberg • Moneta • Boonesboro • Montvale • Saunders	Provided fire suppression and logistical support, including pumping, water supply, electricity, breathing air, ventilation, and decontamination (see also Logistics Section).
Virginia Rescue Squads • Bedford • Goode • Campbell • Huddleston • Moneta • Boonesboro	Provided on-site EMS support.
Webb Technologies	Provided contractor support, as directed by the PRP.
Logistics	
United States Coast Guard National Strike Force Atlantic Strike Team (USCG-AST)	Assisted EPA with health and safety, logistics, interior monitoring, and entry operations.
Virginia Fire Departments • Bedford • Franklin County • Evington • Smith Mt. Lake • Lyn/Dan Heights • Forrest	Provided fire suppression and logistical support, including pumping, water supply, electricity, breathing air, ventilation, and decontamination.

Agency	Brief Description of Duties
• Stuartsville/Chamblissberg • Huddleston • Chamblissberg • Moneta • Boonesboro • Montvale • Saunders	
Finance/Administration	
Because each agency maintained responsibility for tracking and managing its own finances, using disparate systems, financial tracking was not integrated. Each agency maintained its own records.	

Section 2 – U.S. Coast Guard Example of ICS/UC

The U.S. Coast Guard will be developing an example of the Coast Guard's ICS/UC use, to be placed on www.NRT.org, the NRT website, as a supplement to this document.

Appendix D: Sources of More ICS Information

In addition to this ICS/UC Technical Assistance Document, the NRT has developed several other ICS/UC-related documents, including:

- "Minimum Essential ICS Training Elements," at *http://www.nrt.org*
- "Federal Natural Resource Trustees and the ICS/UC," at *http://www.nrt.org*
- Annex 3 of the NRT Integrated Contingency Plan (ICP) Guidance (61 FR 28641) (Annex 3 [on page 28647] provides a description of a response management system based on NIIMS ICS.)

The USCG has developed a number of ICS/UC guidance documents and maintains several ICS/UC-related web sites, including:

- Incident Management Handbook (New FOG) at *http://www.uscg.mil/hq/nsfcc/nsfweb/NSF/onlinedoc.html*
- USCG HQ ICS web site, at *http://www.uscg.mil/hq/g-m/mor/articles/ics.htm*
- RRTs I and II ICS in Oil Spill Response web site, at *http://www.uscg.mil/d1/staff/m/rrt/ics.html*
- On-scene Command and Control Prototype – OSC2, at *http://www.uscg.mil/hq/g-m/mor/articles/osc2.htm*
- National Strike Force Coordination Center (NSFCC) ICS web site – Spill Management Support Service, at *http://www.uscg.mil/hq/nsfcc/nsfweb/nsfcc/ops/ics.html*

Other ICS resources include the following:

- National Wildfire Coordinating Group (NWCG) publications including ICS position task books, ICS job aids, ICS position descriptions and responsibilities, and an ICS glossary, at *http://www.nwcg.gov/teams/pmswt/pms.htm*
- NWCG ICS National Training Curriculum modules, 1994, at *http://www.neotecinc.com/neo/ics100.html*
- Computer-assisted Instruction for ICS: Self-study Course, FEMA and the U.S. Fire Administration, National Fire Academy, in cooperation with the U.S. Army Reserve
- Additional information on ICS/UC, U.S. Department of Labor Occupational Safety and Health Administration web site *http://www.OSHA.gov*
- NOAA Electronic ICS Forms – ICSFORMS Solution, at *http://response.restoration.noaa.gov/oilaids/ICS/intro.html*
- "Setting Objectives in a Unified Command: The 'Cost' of Leadership," 1997 International Oil Spill Conference (IOSC) Proceedings

- ICS, Fire Protection Publications, Oklahoma State University, 1983, at *http://www.fireprograms.okstate.edu/fpp/Index.htm*

- "Unified Command: The Mechanism for Ensuring a Comprehensive, Coordinated Response," 1995 IOSC Proceedings

- ICS Unified Command Video, Texas General Land Office, Oil Spill Prevention and Response Division, 1995

Appendix E: Acronyms

ACP	Area Contingency Plan
AST	Atlantic Strike Team
CAMEO	Computer-Aided Management of Emergency Operations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DES	Department of Emergency Services
DNR	Department of Natural Resources
DOI	U.S. Department of the Interior
EMS	Emergency Management Services
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ERT	Environmental Response Team (EPA)
FBI	U.S. Federal Bureau of Investigation
FEMA	U.S. Federal Emergency Management Agency
FR	Federal Register
HAZWOPER	Hazardous Waste Operations and Emergency Response
HMEP	Hazardous Materials Emergency Preparedness
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
JIC	Joint Information Center
LEPC	Local Emergency Planning Committee
MOA	Memorandum of Agreement
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIIMS	National Interagency Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NRDA	Natural Resource Damage Assessment
NRDAR	Natural Resource Damage Assessment and Restoration
NSFCC	National Strike Force Coordination Center
NRS	U.S. National Response System
NRT	U.S. National Response Team
OPA	Oil Pollution Act of 1990
OSC	On-Scene Coordinator
PFS	Professional Food Systems
PRP	Potentially Responsible Party
RP	Responsible Party
RRT	Regional Response Team
SARA	Superfund Amendments and Reauthorization Act
SATA	Site Assessment and Technical Assistance
SERC	State Emergency Response Commission
UC	Unified Command
U.S.C.	United States Code
USCG	United States Coast Guard
USDA	U.S. Department of Agriculture
WMD	Weapons of Mass Destruction