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**Increase the Use of an Internet Based Application (E-Plan) to Satisfy Tier II  
Reporting Requirements under EPCRA**

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## **Background and History**

In March 2002, the Governor's Office, the Emergency Management Division Office of the Adjutant General and the Department of Health and Environmental Control (DHEC) signed a Memorandum of Understanding (MOU) (see Appendix 1) outlining State responsibilities under Title III, Superfund Amendments and Reauthorization Act (SARA). Under this agreement, one of DHEC's responsibilities is to provide administrative support and assume responsibility for maintenance of the Emergency Planning and Community Right-to-Know Act (EPCRA) Tier II Reports.

EPCRA requires facilities storing any substance for which a material safety data sheet (MSDS) is required by Occupational Safety and Health Administration (OSHA) and in quantities exceeding the Threshold Planning Quantity (specified for Extremely Hazardous Substance or 10,000 pounds for all other substances) to report these substances to the State, Local Emergency Planning Committees (LEPC) and fire departments. The SC State Emergency Response Commission requires an annual submission of these substances (Tier II report) due March 1 from qualifying facilities. DHEC is the reporting point for the State.

Tier II reports contain the following information for each substance:

- the chemical name or the common name as indicated on the MSDS
- an estimate (in ranges) of the maximum amount of the chemical present at any time during the preceding calendar year and the average daily amount
- a brief description of the hazards and manner of storage of the chemical

- the location of the chemical at the facility
- emergency contacts and phone

### **Problem Statement**

For a successful response to a hazardous material accident, first responders need hazardous materials information quickly, completely, accurately, and in an easily understood format. Having this information, allows first responders to plan the most effective response to an incident, protect themselves from being on the casualty list, rescue victims involved in an incident, protect people in the areas around an incident, and minimize property damage. Much of the information contained in the Tier II reports is critical for a successful response to industrial accidents.

E-Plan's Online Tier II Reporting System is a secure, internet accessible repository of facility and hazardous material information. The system provides critical chemical information at the scene and is in use in many communities nationwide. E-Plan was designed specifically for first responders through a cooperative agreement between the United States Environmental Protection Agency (EPA) and The University of Texas at Dallas (UT Dallas). Funding is provided by the United States Department of Homeland Security (DHS). The Tier II reporting year is always one year before the current year (e.g. filing deadline March 1, 2010 for January 1 through December 31, 2009). Tier II reports may be submitted any time between January 1 and March 1. DHEC approved the use of E-Plan to submit Tier II reports in 2010 for the January 1 through December 31, 2009 reporting period. Approximately 70 percent (2300) facilities used E-Plan to submit their reports in 2010. However, the remaining 30 percent submitted their Tier II reports using

other available methods (hard copies, Tier2 Submit Software files through email, Diskettes, and CDs). The complete Tier II inventory needs to be available to first responders on June 1 each year because that date is the beginning of hurricane season. Providing the complete Tier II inventory by June 1 every year is uncertain because the existing resources needed to add the remaining 30 percent of facilities to E-Plan are insufficient.

### **Project Goal**

The two main goals of this project are:

- 1) To increase the number of facilities submitting the Tier II reports directly into E-plan in order to reduce the resources required for data entry, manipulating electronic files, and calling facilities for corrections and clarifications.
- 2) To reduce the amount of time needed to make the complete Tier II inventory available to first responders.

### **Data Collection**

The data collection goals tied to the two project goals were:

- 1) To determine the number of facilities by reporting method.
- 2) To quantify the number of days required to complete the Tier II inventory.

The data collected for the 2006 to 2009 reporting years was extracted from the Tier II files containing the hard copies, diskettes, and CDs. The email portion of the data was collected from the EPCRA email account and Tier2 Submit files managed by the Tier II staff member. These years provided:

- 1) the most recent number of facilities by reporting method per year

- 2) the most consistency due to the same staff member having been in charge of the inventory
- 3) The most reliable data because files before 2006 have been moved to another location

The Tier II reporting methods allowed to be used in South Carolina consist of submitting:

- 1) an email with an attached Tier2 Submit file
- 2) hard copies
- 3) a diskette or CD with an attached Tier2 Submit file
- 4) data directly into E-Plan

The Tier II staff member and I used Fishbone Diagrams to identify the possible causes related to facilities not using E-Plan and reason for the late completion of the Tier II inventory (see Appendix 2 and 3).

Some of the operational terms and definitions used in this project appear below:

E-Plan: a secure, internet accessible repository of facility and hazardous material information.

Tier2 Submit Software: a personal computer software developed by EPA and NOAA for use by facilities in submitting Tier II reports.

Tier II reporting year: the Tier II reporting year is always one year before the current year (e.g. filing deadline March 1, 2010 for January 1 through December 31, 2009). Tier II reports may be submitted any time between January 1 and March 1.

State, Local Emergency Planning Committees (LEPC): LEPCs must develop an emergency response plan, review it at least annually, and provide information about chemicals in the community to citizens. Plans are developed by Local Emergency Planning Committees (LEPCs) with stakeholder participation. The LEPC membership includes elected state and local officials, police, fire, civil defense, public health professionals, environmentalists, transportation entities, hospital officials, facility representatives, and representatives from community groups and the media.

South Carolina Emergency Management Division (EMD): Develops plans and procedures to ensure the highest levels of mitigation, preparedness, response, and recovery; maintains a comprehensive, risked-based, multi-hazard emergency management and training program; coordinates federal, state, and local resources for mitigation, preparedness, response and recovery operations.

Emergency Response Commissions (SERCs): the Governor of each state designates a SERC which is responsible for implementing EPCRA provisions within its state. The SERC's duties include: Establishing procedures for receiving and processing public requests for information collected under EPCRA; reviewing local emergency response plans; designating local emergency planning districts; appointing a Local Emergency Planning Committees (LEPC) for each district; supervising the activities of the LEPC

Validation: it is a process which verifies that all required information is being entered into a system. The E-Plan's Online Tier II Reporting System will not allow facilities to submit Tier II data to E-Plan until the "Submission Validation Report" indicates all required fields are correct. Likewise, Tier2 Submit checks for missing information before

creating a Tier2 Submit file. In contrast, Tier II staff member conducts validation for hard copies.

## Data Analysis

### E-Plan Usage

Approximately 70% of the Tier II reporting facilities submitted the reports directly into E-Plan for the first time for the 2009 reporting period. Table 1 below shows collected data.

**Table 1 - Number of facilities by reporting method**

Reporting Method	2006		2007		2008		2009	
	# Facilities	%	# Facilities	%	# Facilities	%	# Facilities	%
Hard Copy	745	23	547	16	623	19	356	11
Email	1659	52	2067	59	2003	61	554	16
CD, Diskette	800	25	874	25	669	20	100	3
E-Plan	N/A		N/A		N/A		2368	70
<b>Total</b>	<b>3204</b>	<b>100</b>	<b>3488</b>	<b>100</b>	<b>3295</b>	<b>100</b>	<b>3378</b>	<b>100</b>

Based on the cause and effect analysis conducted with the Tier II staff member, the most likely causes 30 percent of the facilities use other reporting methods are:

- 1) Use of E-Plan was not mandatory

E-Plan was not made mandatory the first year because there was a concern about facilities without a computer or the internet. Of the 3,378 facilities that submitted Tier II reports for the 2009 reporting year, 11 percent submitted hard copies. The rest of the facilities had access to a computer and the Internet. Facilities submitting Tier2 Submit

files via e-mail or CD must use the latest version of Tier2 Submit software provided by the EPA. It was estimated that half of the 11 percent of facilities that submitted hard copies used Tier2 Submit software to enter the Tier II data and printed it.

2) Facilities resisted changing reporting methods

In 2009, 554 facilities submitted Tier II reports via email. A reply email encouraging facilities to use E-Plan was sent to all of these facilities as soon as the email was received. All of these facilities could have open an account in E-Plan and uploaded the Tier2 Submit file. They chose not to take the extra step because the use of E-Plan was not mandatory. Some facilities submitted hard copies via certified mail in order to get written confirmation that the reports were received by DHEC even though E-Plan generates a confirmation email when the reports are submitted by the account holder. Other facilities simply photocopied the previous year's report and changed the date and mailed it in.

3) E-Plan notifications were sent/mailed too close to the compliance date

The final decision to allow facilities in South Carolina to use E-Plan for Tier II reporting was made in October 2009. Once the decision was made to allow the use of E-Plan, several outreach activities were conducted to notify stakeholders (Facilities, EMD, LEPCs, and Local Fire Departments). The EPCRA/Tier II website was updated to reflect the additional reporting method. A notification e-mail was sent in December, 2009 to the available email addresses in the Tier II inventory. However, not all facilities provide email addresses. In order to notify the entire regulated community and other stakeholders, an additional notification letter was mailed at the end of January 2010. Additional effort



was put into conducting meetings and training sessions to introduce E-Plan to the LEPCs. This is an effective way to reach the regulated facilities that participate in the LEPCs. However, not all LEPCs in the State are active and therefore the facilities in those LEPC's areas could not be reached by this effort. Appendix 4 depicts the above-mentioned outreach and training activities all over the State conducted by the Tier II staff member.

The use of E-Plan was mentioned in the Environmental Assistance Conference (EAC) held by DHEC in November 2009. Also, an article which featured E-Plan appeared in a DHEC compliance assistance letter called COMPASS in fall 2009. This E-News letter targets industry, especially small businesses which are a large portion of the Tier II regulated community. Several facilities stated that they would have used E-Plan if they would have been notified earlier. However, these facilities didn't want to use E-Plan because they were concerned about submitting the reports before the March 1 due date.

Tier II Inventory Availability

The target date to have the complete Tier II inventory is June 1 which is the beginning of the hurricane season. Table 2 depicts the days required to complete the inventory for the last three years.

**Table 2 – Days between Tier II reporting due date and completion of Tier II inventory**

<b>Reporting Year</b>	<b>Tier II Reporting Due Date</b>	<b>Tier II Inventory Completion Date</b>	<b>Days Required to Complete Tier II Inventory</b>	<b>Number of Tier II Facilities Available in the Inventory on March 1</b>
2007	March 1	June 1, 2008	92	0
2008	March 1	August 1, 2009	151	0

2009	March 1	September 2, 2010	185	2173
<p><b>2007</b> Administrative assistant entered all reports (paper) into the system. Tier II staff member called facilities for the missing information (Maximum amount in largest container &amp; Dike/spilled containment-yes or no).</p> <p><b>2008</b> Two administrative assistants entered most reports (paper) into the system. Tier II staff member called facilities for the missing information (maximum amount in largest container).</p> <p><b>2009</b> Administrative assistant and hourly employee entered most reports (paper) into the system. Tier II staff member called facilities for missing information. Also, Tier II staff member checked E-Plan to verify if facilities put the report into system and to make sure a facility report was not put in the system twice.</p>				

Based on the cause and effect analysis conducted with the Tier II staff member, the most likely causes the Tier II inventory has not been completed by June 1 are:

1) Use of multiple reporting methods

Hard copies can be submitted using the Tier II Federal form, the Tier II State form, the Tier2 Submit print out, or the E-Plan print out. These forms are to be mailed to DHEC. Once they are received, they have to be stamped and taken to the Tier II staff member. Then, the reports are entered into Tier2 Submit. If information is missing, the information is requested by phone. Sometimes multiple calls are required to get the missing information. Once the information from all the hard copies is entered into a Tier2 Submit, the Tier II staff member uploads this portion of the inventory into E-Plan.

Tier2 Submit files are received via e-mail. Once the e-mail is reviewed and the file saved, the Tier II staff member sends an email confirming that the e-mail was received. Tier2 Submit files submitted in CDs are scanned for viruses and then saved along with the e-mailed files. Once all of Tier2 Software files are saved in a single place, the Tier II staff member uploads this portion of the inventory into E-Plan for validation. However, when they are uploaded into E-Plan, some of these files don't pass E-Plan's

validation. Some facilities have to be contacted by phone or e-mail in order to request the missing information. Final upload of this portion cannot be completed until all facilities pass validation.

Tier II reports submitted directly into E-Plan by the facilities are immediately part of the inventory and available when the facility completes validation and uploads the Tier II report. E-Plan sends an automatic confirmation email to the facility stating that the report has been submitted.

## 2) Limited manpower for data entry and data validation

There is a half of full time employee (FTE) assigned to the EPCRA/Tier II activities. This employee collects and enters Tier II report information into E-Plan. This employee also conducts outreach and compliance assistance activities such as encouraging the use of E-Plan for submission of Tier II reports instead of via CD, e-mail, or by hard copy. In addition, this employee responds to e-mails received at [EPCRA@dhec.sc.gov](mailto:EPCRA@dhec.sc.gov) and ensures the DHEC website has the latest Tier II reporting information. Finally, the employee provides data and technical support and coordinates EPCRA activities with State and Federal agencies, LEPC, and fire departments. For the 2006 to 2009 reporting years, the employee received assistance from part-time, hourly, and administrative staff for data entry. However, the June 1 deadline was not met for 2008 and 2009 because the amount of time required to conduct data entry surpassed the capacity of the available assistance.

The Tier II staff member spends a considerable amount of time calling facilities for missing information and waiting for responses. This problem is exacerbated by the fact that some of the Tier2 Submit files are not passing E-Plan's validation. In addition, the introduction of E-Plan for the 2009 reporting year created an increase in the amount of time invested in outreach activities, answering calls related to the use of E-Plan, and updating the website. While it is expected this effort will decrease in the future, the above problems are expected to prevent the Tier II staff member from completing the inventory by June 1 each year.

### **Proposed Solution**

I proposed the use of E-Plan as the sole Tier II reporting method in South Carolina to satisfy the state reporting requirement in order to reduce the resources required to complete the inventory and decrease the amount of time needed to make the complete Tier II inventory available to first responders. Consolidating all the reporting methods into a single web-based reporting system would reduce redundancy and data manipulation as well as the potential for transposition errors. E-Plan is free to both the State and the regulated community and many other states already use it. There are other web-based Tier II reporting systems available. However, these systems are costly. Other states use them because their SERCs charge fees to their Tier II facilities. South Carolina does not have a fee structure for Tier II reports. Therefore, this option was not considered viable or necessary.

### **Advantages of using E-Plan**

- 1) It is free, simple and easy for first responders and State and Federal users to use
- 2) E-Plan provides Tier II reporting data and other important information instantly
- 3) Improves data accuracy
- 4) No need to conduct data entry or validation
- 5) The Tier II inventory will be complete by reporting deadline (March 1)
- 6) Previous inventories will be stored electronically
- 7) Facilities do not have to install any software on their computer to submit the reports
- 8) E-Plan allows the facilities to retrieve their submission from any computer with the security of an access ID and password that is known only to them

### **Implementation Plan**

The decision to make E-Plan the only reporting method for Tier II was made in the summer of 2010. E-Plan is free to both the State and the regulated facilities. There was no cost related to making the use of E-Plan mandatory for the state. A key component for the successful implementation of the solution is informing the Tier II facilities in South Carolina to only use E-Plan for the next reporting period. Even though the due date is not until March 1, 2011, many facilities start working on preparing their Tier II reports in the fall of the previous year.

The first step was to update the website to reflect the fact that E-Plan is the only reporting method and that other reporting methods will no longer be acceptable. The website was updated the second week of September 2009. This step was important in order to continue the rest of the outreach and communication activities to increase the use

of E-Plan because the website was referenced in emails and letters. In addition, the EPA was advised to update their website in order to reflect the change. The EPA's website was updated in September also.

The second step was to inform facilities that sent an email with a Tier2 Submit file to start using E-Plan for the next report. An email was sent at the end of September 2009, to all of these facilities and to any other email account that requested Tier II information from the EPCRA email account or from the Tier II staff member. The email included a link to open an account in E-Plan and guidance on how to upload the Tier2 Submit file into E-Plan. This email was sent to over 1,000 email accounts of Tier II facilities, LEPCs, and first responders. If facilities submit Tier2 Submit files in the future via email to the EPCRA email account, an auto-reply message with a standard response directing the facility to use E-Plan will be sent.

The third step was to inform facilities which mailed hard copies to start using E-Plan for the next report period. Over 400 letters were mailed at the end of October 2009, to the facilities that submitted hard copies for the previous reporting period. The letter included the link to open an account in E-Plan. The cost of mailing the letters was absorbed as part of routine outreach activities. This group of facilities may be the most challenging group to persuade. Some of these facilities don't have a computer and therefore may need to go to a public library or use another method to access the internet. In addition, the person submitting the reports may not have the knowledge to submit the information over the internet. Some of these facilities may decide to mail hard copies instead of using E-Plan. These facilities will be called and advised to use E-Plan. Based

on previous experience going into a web-based reporting system, it is expected that a small portion of the Tier II facilities will resist using E-Plan. Additional outreach may be conducted for this segment of the Tier II universe.

Other outreach activities include additional reminders via email and a letter closer to the reporting due date. Also, E-Plan information was provided in the Environmental Assistance Conference (EAC) held on November 3, 2010 and in a DHEC news letter sent to over 400 facilities in October 2010.

The E-Plan website provides an online training video for E-Plan's online Tier II electronic submittal at no cost. This video provides company managers with the basic knowledge of the E-Plan system and instruction on how to create a Tier II report. Also, the website has a Q&A section which includes all the steps to follow to submit the Tier II reports.

### **Evaluation Method**

Two indicators will be used to evaluate the proposed solution:

- 1) Percentage of facilities submitting the Tier II reports directly into E-plan and other methods. This information can be easily collected from E-Plan, EPCRA email account, and hard copies submitted.
- 2) Amount of time needed to make the complete Tier II inventory available to first responders. If all facilities submit their Tier II reports on time using E-Plan, the inventory would be complete by March 1. However, it is expected that some facilities will be late or try to use other methods. Even if some facilities use

other methods, the vast majority will use E-Plan and therefore the complete inventory would be available earlier. The Tier II staff member sends an email to first responders notifying that the inventory is complete.

### **Summary and Recommendations**

Making E-Plan the only method to submit Tier II reports would reduce the amount of time required to complete the inventory. The time and resources required to complete the inventory would be greatly reduced because data entry and the validation process would be conducted by the facility. Data entry and validation conducted by the facilities would increase the accuracy of the reports. Facilities would benefit because once the information is entered into E-Plan, the following year they can use the same information or update the report to reflect any changes. Facilities would receive an auto-reply email confirming the report has been submitted. First responders would also benefit because the Tier II information would be available as soon as a facilities submit their reports.

When E-Plan was allowed to be used as a Tier II reporting method in 2009, approximately 70% of the facilities switched to this reporting method despite the fact this method was not mandatory. Facilities emailing Tier2 Submit files can easily start using E-Plan because they have internet access. This would increase E-Plan participation to 90%. Some of the facilities submitting hard copies may have problems changing from a paper to a web base system. Additional outreach activities may be needed for the facilities that continue to send hard copies.

Finally, web-based E-Plan reporting is an efficient method to submit Tier II information and consistent with today's trend to use the internet to manage large amount



of information from numerous sources. Other states are using this system and its implementation requires no cost to DHEC or the facilities except for the initial time invested for the transition.

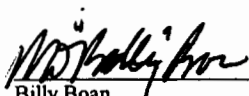
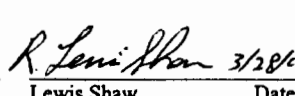

## Appendix 1 – SERC Memorandum of Understanding (MOU)

### MEMORANDUM OF UNDERSTANDING CONCERNING STATE AGENCY RESPONSIBILITIES AS REQUIRED BY TITLE III, EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW, SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) OF 1986 AND EXECUTIVE ORDER 2001-41

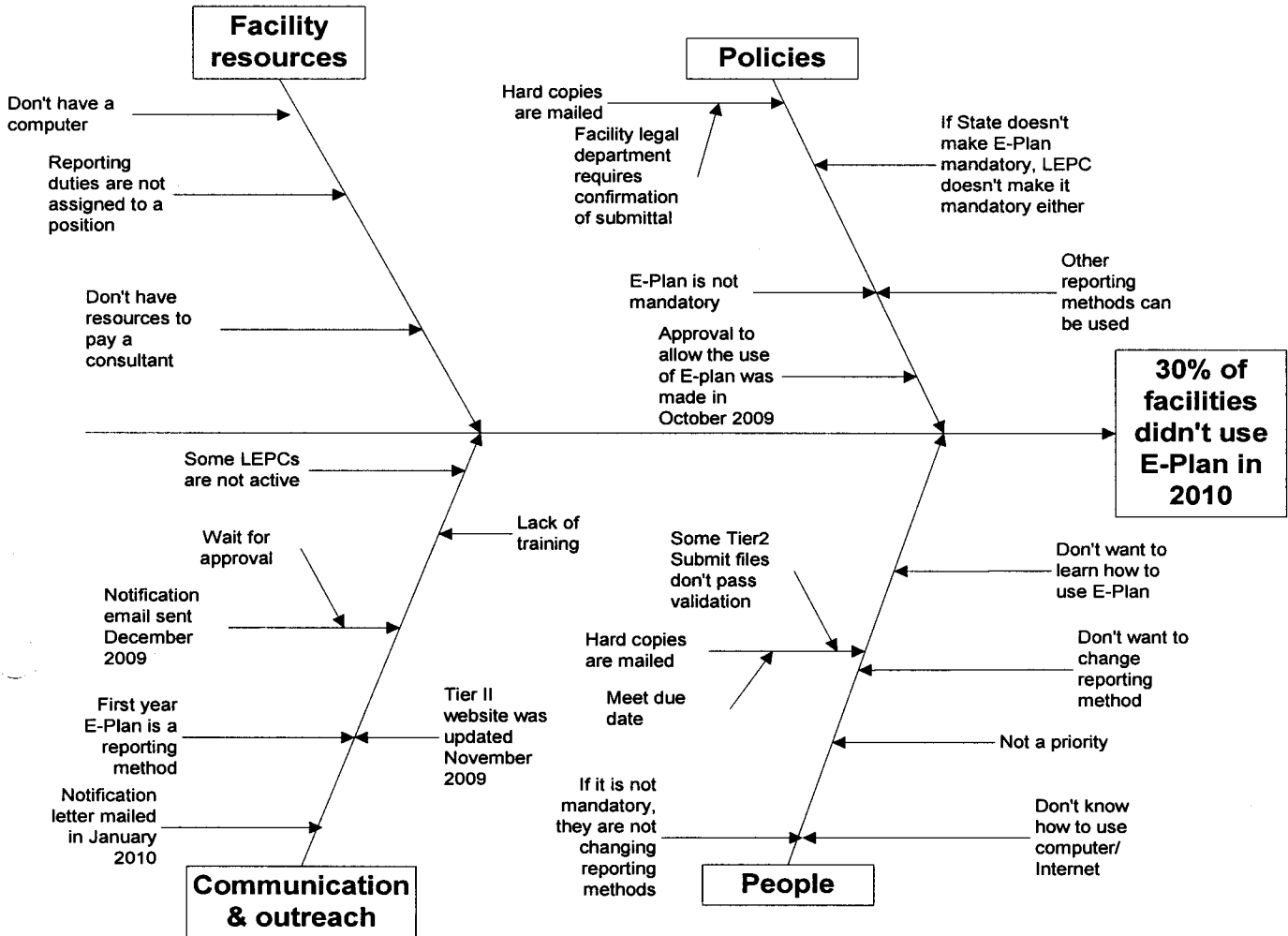
The undersigned officials of the Office of the Governor; the South Carolina Emergency Management Division, Office of the Adjutant General; and Environmental Quality Control, Department of Health and Environmental Control, do hereby agree and consent to the following assignment of responsibility required by Title III, SARA.

1. Office of the Governor:
  - A. Provide public information support to the Commission (less public requests for specific chemical information).
  - B. Provide Governor's support for the State Regulations 58-1 and 58-101, Local and State Emergency Preparedness Standards.
  - C. Act as lead agency for submission of Title III proposed legislation to the General Assembly.
  
2. Department of Health and Environmental Control, Environmental Quality Control:
  - A. Provide administrative support and assume responsibility for maintenance of the EPCRA Tier II Reports and Toxic Release Inventory Reports submitted to the State.
  - B. Provide for Community Right-To-Know release provisions at the State level.
  - C. Provide for twenty-four hour, seven-day notification provisions for chemical emergencies.
  - D. Provide chemical technical personnel, as resources permit, to local planning committees.
  
3. Office of the Adjutant General, Division of Emergency Management:
  - A. Provide administrative support for the State Emergency Response Commission.
  - B. Prepare Hazardous Materials Annex to South Carolina Emergency Operations Plan.
  - C. Provide Chemical (Hazardous Materials) Emergency Response planning support to local planning committees.
  - D. Approve local planning committee Hazardous Materials Response Plans in accordance with Regulations 58-1 and 58-101.

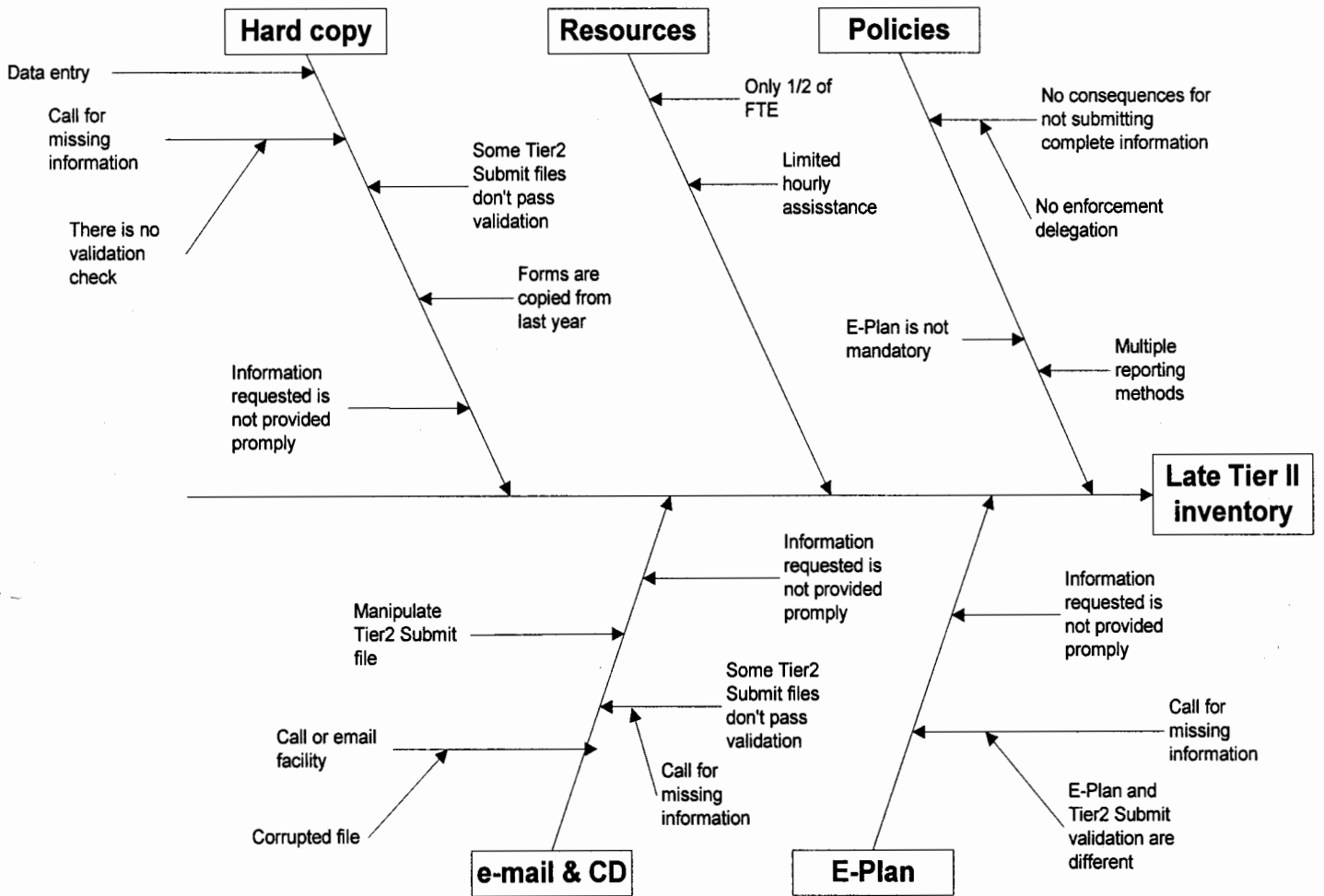
This Memorandum of Understanding is subject to renegotiation at the request of any of the below signed parties.

	Date	 3/28/02	Date	 3/28/02	Date
Billy Boan Chief of Staff, Office of the Governor		Lewis Shaw Deputy Commissioner, Environmental Quality Control, Department of Health and Environmental Control		Ronald Osborne Director, Emergency Management Division, Office of the Adjutant General	

**Appendix 2 - Fishbone Diagram: 30% of Facilities didn't use E-Plan in 2010**



### Appendix 3 - Fishbone Diagram: Late Tier II Inventory



**Appendix 4 – Meetings and Trainings to Introduce E-Plan to Stakeholders**

<b>Date</b>	<b>Organization</b>	<b>County/City</b>
October 8, 2009	Colleton County LEPC	(Colleton County) Walterboro, SC
October 15, 2009	Greenville County LEPC	(Greenville County) Greenville, SC
December 9, 2009	Charleston County LEPC	(Charleston County) Charleston, SC
January 12, 2010	Region 6-SC EMD Quarterly Meeting	(Hampton County) Hampton, SC
January 26, 2010	SC EMD County Directors Meeting	(Lexington County) W. Columbia, SC
January 27, 2010	Pickens County LEPC	(Pickens County) Pickens, SC
February 3, 2010	Laurens County LEPC	(Laurens County) Clinton, SC
February 11, 2010	Region 1-SC EMD Quarterly Meeting	(Greenville County ) Greenville, SC
February 17, 2010	Region 3-SC EMD Quarterly Meeting	(Lexington County) W. Columbia, SC
March 1, 2010	Spartanburg County LEPC	(Spartanburg County) Spartanburg, SC
March 9, 2010	Berkeley County LEPC	(Berkeley County) Moncks Corner, SC
March 19, 2010	Aiken County LEPC	(Aiken County) Aiken, SC
May 5, 2010	Dorchester County LEPC	(Dorchester County) Summerville, SC
August 19, 2010	Lexington County Unified Chief/LEPC	(Lexington County) Lexington, SC