

TO: Distribution

TGG: JCL: ERT: MJH: AJO: BF

FROM: T. G. Grumbles

XF: \_\_\_\_\_

DATE: June 12, 1990

Interoffice  
Communication

SUBJ: RESPONSIBLE CARE WASTE AND RELEASE REDUCTION CODE (WARR)  
SELF-EVALUATION

VISTA

Attached is the self-evaluation form for the WARR Code. As has been requested, this form is being sent to you to assure it is assigned to the appropriate personnel for completion. It should be returned to me in Houston by August 1, so I can summarize Vista's responses and provide to CMA by August 10.

The self-evaluation was reviewed at the environmental meeting, along with the draft guidelines distributed on May 25. Attached is a summary of items agreed to and general internal guidelines to be used when completing the self-evaluation.

TGG

T. G. Grumbles

dlj  
1108

Attachment

Distribution: PLANT MANAGERS

R. W. Seymour-Aber, L. R. Bauer-Balt, G. D. Williams-Blane, J. Pavao-Hmd, J. Friend-LCCP, J. W. Ware-LCLAB, R. A. Conrad-LCVCN, H. D. Garrison-Okc, P. L. Foote-Prem, V. W. Weiss-Austin

cc: T. H. Huffman, J. A. DeBernardi, R. D. Gamblin, G. G. Draper

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OK

## WARR SELF-EVALUATION GUIDELINES

### GENERAL ISSUES

1. Vista waste definition currently used in our waste minimization program is sufficient in scope to conform to CMA's definition for the WARR Code. ("Clean" stormwater and products of combustion are not part of our inventories.)
2. Documentation for the evaluation forms should be provided with the forms when sent back to me. This can be a simple listing of activities or projects done or in-progress that demonstrates why you believe your plant is at the stage you indicated.

### SPECIFIC ELEMENTS

1. For Item I, all plants should indicate Level V. This is based on the following.
  - a. Establishment of environmental policy
  - b. Establishment of a formal waste minimization programs
  - c. Plant goal setting in waste reduction areas
  - d. Specific project examples
2. Waste inventories completed based on Vista's waste minimization program definition is sufficient for this evaluation
3. For this element the term "evaluation" should be considered to include the following activities:
  - a. Air modeling of emissions to assess health risks
  - b. Volume and toxicity prioritization
  - c. Consideration of odor and/or nuisance effects
  - d. Potential for release pathway consequences (i.e. groundwater to usable aquifer vs. air emissions)
  - e. Ambient monitoring areas potentially impacted by air emissions
  - f. Employee or public feedback
  - g. Technological feasibility of reduction methods
  - h. Regulatory requirements

If any combination of the above have been used to prioritize or evaluate reduction project feasibility documentation should be available.
4. This element includes initial communication with employees and public about waste and emission inventories and impact. If only employees but not the public have been contacted or communicated with, then Stage III is probably the most descriptive. If you've communicated about SARA 313 emissions, remember these are considered part of the "waste" inventories.

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5. This element includes considering the results of elements 3 and 4 to establish reduction goals, qualitative or quantitative.
6. The only qualifier for this element is that 313 paperwork reductions don't count for this evaluation.
7. This element is tied to element 2. The score of this cannot be higher than element 2 and based on current activities and the fact that most locations have just completed an initial inventory. The score probably should be Stage III.
8. The score on this element is tied to element 4 and cannot be higher than that element. This element is similar to element 4 but encompasses ongoing dialogue and "progress" reports to the same audiences.
9. If no specific projects can be cited at your location, you should score a Stage III based on the environmental policy adoption.
10. The definition of others includes customers, industry neighbors, trade association efforts, industry consortiums, etc. This is the most vague element. Call me if you want to discuss activities that should count.

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## Responsible Care.® A Public Commitment

### WASTE AND RELEASE REDUCTION CODE OF MANAGEMENT PRACTICES

#### Purpose.

This Code is designed to achieve ongoing reductions in the amount of all contaminants and pollutants released to the air, water, and land from member company facilities. These reductions are intended to respond to public concerns with the existence of such releases, and to further increase the margin of safety for public health and the environment.

The Code is also designed to achieve ongoing reductions in the amount of wastes generated at facilities. These reductions are intended to help relieve the burden on industry and society of managing such wastes in future years.

In implementing the Code, each company should strive for annual reductions, recognizing that production rates, new operations, and other factors may result in increases. Despite these fluctuations, however, the goal is to establish a long-term, substantial downward trend in the amount of wastes generated and contaminants and pollutants released. Quantitative reduction goals will be established for giving priority to those pollutants, contaminants and wastes of highest health and environmental concern.

This Code complements, and should be implemented in conjunction with current and future Codes of Management Practices. Key terms are defined in the Glossary, which should be consulted for assistance in interpreting the provisions of this Code.

#### Relationship to Guiding Principles.

Implementation of this Code helps achieve the following Guiding Principles:

- o To recognize and respond to community concerns about chemicals and our operations;
- o To operate our plants and facilities in a manner that protects the environment and the health and safety of our employees and the public;

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- o To make health, safety, and environmental considerations a priority in our planning for all existing and new products and processes:
- o To extend knowledge by conducting or supporting research on the health, safety, and environmental effects of our products, processes, and waste materials.
- o To promote the principles and practices of Responsible Care by sharing experiences and offering assistance to others who produce, handle, use, transport, or dispose of chemicals.

### **Management Practices.**

Each member company shall have a waste and release reduction program which shall include:

1. A clear commitment by senior management through policy, communications, and resources, to ongoing reductions at each of the company's facilities, in releases to the air, water, and land and in the generation of wastes.
2. A quantitative inventory at each facility of wastes generated and releases to the air, water, and land, measured or estimated at the point of generation or release.
3. Evaluation, sufficient to assist in establishing reduction priorities, of the potential impact of releases on the environment and the health and safety of employees and the public.
4. Education of, and dialogue with, employees and members of the public about the inventory, impact evaluation, and risks to the community.
5. Establishment of priorities, goals and plans for waste and release reduction, taking into account both community concerns and the potential health, safety, and environmental impacts as determined under Practices 3 and 4.
6. Ongoing reduction of wastes and releases, giving preference first to source reduction, second to recycle/reuse, and third to treatment. These techniques may be used separately or in combination with one another.
7. Measurement of progress at each facility in reducing the generation of wastes and in reducing releases to the air, water, and land, by updating the quantitative inventory at least annually.
8. Ongoing dialogue with employees and members of the public regarding waste and release information, progress in achieving

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reductions, and future plans. This dialogue should be at a personal, face-to-face level, where possible, and should emphasize listening to others and discussing their concerns and ideas.

9. Inclusion of waste and release prevention objectives in research and in design of new or modified facilities, processes, and products.
10. An ongoing program for promotion and support of waste and release reduction by others, which may, for example, include:
  - a. Sharing of technical information and experience with customers and suppliers;
  - b. Support of efforts to develop improved waste and release reduction techniques;
  - c. Assisting in establishment of regional air monitoring networks;
  - d. Participation in efforts to develop consensus approaches to the evaluation of environmental, health, and safety impacts of releases;
  - e. Providing educational workshops and training materials;
  - f. Assisting local governments and others in establishment of waste reduction programs benefitting the general public.

#### Industry Trend Data.

To develop and maintain statistical industry trends, CMA will collect currently available data. Each company shall report annually to CMA, or its designated agent, for each facility:

- o Releases of substances as reported under SARA Section 313; and
- o Wastes generated, as defined and reported in CMA's annual hazardous waste survey.

#### Member Self-Evaluation.

Each member company shall report annually to CMA, or its designated agent, the stage of implementation of each management practice in this Code. The reports shall be on the member self-evaluation form attached as Attachment B.

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### **Glossary of Terms**

As used in this Code, key terms are defined as set forth below. Note that these definitions may be broader than regulatory definitions, and that adherence to this Code does not relieve a company of the obligation to meet Federal, state and local regulatory requirements.

**Facility** - A site used for chemical manufacturing, processing, refining, packaging, R&D, distribution or related commercial activity.

**Recycle** - A practice which regenerates or processes a material from a process to recover a useable product or material for reuse.

**Release** - Any emission, effluent, spill, discharge or disposal to the air, land, or water, of any pollutant or contaminant, whether routine or accidental, at or from a facility. The term does not include shipment or distribution of chemical product, nor release to the environment as part of normal and intended use of a product by the consumer.

**Reuse** - A practice that reemploys a material from a process either as an ingredient in a process to make a product, or as an effective substitute for a commercial product in a particular function or application.

**Source Reduction** - A practice that reduces the amount of any release or waste generated at the source, including closed loop recycle and reuse before exit from a process. The term includes, among other practices, equipment and technology modifications, process and procedure modifications, reformulation and redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training and inventory control.

**Treatment** - A practice, other than recycle or reuse, that alters the physical, chemical, or biological characteristics or the volume of a waste through a process or activity separate from the production of a commercial product or the provision of a service.

**Waste** - Any gas, liquid, or solid residual material at a facility, whether hazardous or nonhazardous, that is not used further in the production of a commercial product or provision of a service and which itself is not a commercial product.



Responsible Care:®  
A Public Commitment

CHEMICAL MANUFACTURERS ASSOCIATION  
MEMBER SELF-EVALUATION FORM

WASTE AND RELEASE REDUCTION  
CODE OF MANAGEMENT PRACTICES

Member Company

Name: \_\_\_\_\_

Responsible Care Coordinator

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: ( ) \_\_\_\_\_

Number of facilities subject to Code \_\_\_\_\_

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## WASTE AND RELEASE REDUCTION CODE

### Instructions:

1. Under the Responsible Care Initiative, each member company will submit a Self-Evaluation form annually to CMA. To establish the industry baseline, each member company should complete this Self-Evaluation form and send it to Heiden Associates by **August 10, 1990**.

Dr. Edward J. Heiden  
Heiden Associates, Inc.  
1815 H Street, NW  
Suite 501  
Washington, D.C. 20006

2. Indicate on the cover page the number of member company facilities subject to the Code. Each company must report the implementation stage for all facilities subject to the Code on this form.
3. For each Management Practice on the following two pages, indicate the number of facilities that have attained each implementation stage. Each facility should appear in only one milestone stage per Management Practice. That is the total number of facilities subject to the Code should equal the number of facilities across all six implementation stages for each Management Practice.
4. For the Industry Trend Data, show the total number of facilities in each appropriate box. The total number of facilities for each type of Trend Data should equal the total number of facilities subject to the Code.
5. Only subject facilities owned or operated as of the reporting date should be included.
6. The implementation stages are:
  - Stage I - No action.
  - Stage II - Evaluating company practices against Code practice.
  - Stage III - Developing action plan to implement Code practice.
  - Stage IV - Implementing action plan.
  - Stage V - Code management practice in place.
  - Stage VI - Implementation reviewed and reaffirmed this year.

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WASTE AND RELEASE REDUCTION CODE

Management Practice Milestones

Management Practices

Stages

|                                                                                                                                                                                                                                | I | II | III | IV | V | VI |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|-----|----|---|----|
| 1. A clear commitment by senior management through policy, communications, and resources, to ongoing reductions, at each of the company's facilities, in releases to the air, water, and land and in the generation of wastes. |   |    |     |    |   |    |
| 2. A quantitative inventory at each facility of wastes generated and releases to the air, water, and land, measured or estimated at the point of generation or release.                                                        |   |    |     |    |   |    |
| 3. Evaluation, sufficient to assist in establishing reduction priorities, of the potential impact of releases on the environment and the health and safety of employees and the public.                                        |   |    |     |    |   |    |
| 4. Education of, and dialogue with, employees and members of the public about the inventory, impact evaluation, risks to the community.                                                                                        |   |    |     |    |   |    |
| 5. Establishment of priorities, goals and plans for waste and release reduction, taking into account both community concerns and the potential health and safety impacts as determined under Practices 3 and 4.                |   |    |     |    |   |    |

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WASTE AND RELEASE REDUCTION CODE

Management Practice Milestones

Management Practices

Stages

|                                                                                                                                                                                                                                                                                                                        | I | II | III | IV | V | VI |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|-----|----|---|----|
| 6. Ongoing reduction of wastes and releases, giving preference first to source reduction, second to recycle/reuse, and third to treatment. These techniques may be used separately or in combination with one another.                                                                                                 |   |    |     |    |   |    |
| 7. Measurement of progress at each facility in reducing the generation of wastes and in reducing releases to the air, water, and land, by updating the quantitative inventory at least annually.                                                                                                                       |   |    |     |    |   |    |
| 8. Ongoing dialogue with employees and members of the public regarding waste and release information, progress in achieving reductions, and future plans. This dialogue should be at a personal, face-to-face level, where possible, and should emphasize listening to others and discussing their concerns and ideas. |   |    |     |    |   |    |
| 9. Inclusion of waste and release prevention objectives in research and in design of new or modified facilities, processes, and products.                                                                                                                                                                              |   |    |     |    |   |    |
| 10. An ongoing program for promotion and support of waste and release reduction by others.                                                                                                                                                                                                                             |   |    |     |    |   |    |

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## WASTE AND RELEASE REDUCTION CODE

### Industry Trend Data

Report annually to CMA or its designated agent, for each facility:

|                                                                                               | Annual<br>report<br>submitted* | Annual<br>report not<br>submitted* | Annual report<br>not required<br>to be submitted* |
|-----------------------------------------------------------------------------------------------|--------------------------------|------------------------------------|---------------------------------------------------|
| 1. Release of substances as<br>reported under SARA<br>Section 313; and                        |                                |                                    |                                                   |
| 2. Wastes generated, as<br>defined and reported in<br>CMA's annual hazardous<br>waste survey. |                                |                                    |                                                   |

\*Enter number of facilities for which annual report to CMA has or has not been submitted.

### NOTES:

1. CMA expects to receive release data only from those facilities that are required to complete the Form R following the requirements in the Superfund Amendment and Reauthorization Act (SARA) Section 313 and EPA's clarifying regulations and instructions. Companies, not required to report 313 release data to EPA, may volunteer to send release data to CMA. These facilities are not required to submit release data to CMA as an obligation of membership.
2. The 313 Form R release data are due to CMA on July 1, 1990, the same time these data are due to U.S. EPA. These release data cover the calendar year 1989 and form the baseline for the CMA's industry trend data. CMA will issue clarifying instructions about how companies can report these TRI data to CMA. CMA is looking at several options:
  - o Submission of the same data as EPA requires.
  - o Submission of aggregated facility totals by media.

Companies are asked to await further instructions before sending CMA the 313 Form R's.

3. The first year for companies to complete CMA's annual Waste Survey as an obligation of membership under the Waste and Release Reduction Code will begin with the data covering the calendar year 1990. This survey will be sent to the Responsible Care Coordinators in the Spring of 1991.

CMA will send the annual Waste Survey covering the calendar year 1989 to members in May 1990. Completion of the survey covering the 1989 calendar year remains voluntary.

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ATTACHMENT C

**WASTE AND RELEASE REDUCTION  
CODE OF MANAGEMENT PRACTICES  
QUESTION AND ANSWERS**

1. Is this a voluntary or mandatory policy?

**Answer:** The Waste and Release Reduction Code of Management Practices has been developed under CMA's Responsible Care program. Adherence to the Responsible Care guiding principles is an obligation of membership in CMA.

2. Must the Management Practices be completed in the specific order listed?

**Answer:** The Management Practices are laid out in a logically sequential pattern to complete a reduction project. The sequence should be generally adhered to although slight re-arrangement under specific circumstances may be warranted.

3. Since the scope of this policy covers all hazardous and non-hazardous wastes and releases, doesn't the Code require too much too fast or dilute the focus from hazardous pollutants?

**Answer:** The public is not seeing or making a distinction between hazardous and non-hazardous releases and wastes. Public opinion research shows that the public wants releases lowered and performance improved. This research indicates that the public is concerned about both chemicals and trash generated by industry.

The definition of "hazardous" is not uniform throughout the United States, since many states have their own definitions that are more restrictive than the federal EPA's. Furthermore, these definitions of "hazardous" keep changing over time.

Each company is starting from differing points. Each company must identify its own reduction opportunities, identify the concerns of its own public, determine the reduction priorities and goals, and develop and implement its own reduction plan. The goal of this Code is continued performance improvement by a long term commitment to the reduction of wastes and releases.

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Questions & Answers about the  
Waste & Release Reduction Code  
April 10, 1990

4. Why does this Code appear to endorse reductions for reductions sake? Why should wastes and releases be reduced below health-based standards? Why should wastes and releases be reduced below levels allowed by statute, regulation, or permit?

**Answer:** The public does not endorse the concept of "permitted" generation of wastes or releases to the environment. The public desires an increased margin of safety and environmental protection as a goal. If the policy is to address the concerns of the public, it must require sustained reductions.

5. Is this Code a never-ending spiral of reductions?

**Answer:** The policy is flexible so that each company can assess the viability of further reductions. Certainly, reductions will be sustained under the Code as long as they are technically and economically viable. To the extent reduction options remain viable, the goal is to establish a long-term, substantial downward trend in wastes generated and releases to the environment.

6. Will this Code cause members to accomplish substantive reductions?

**Answer:** To achieve the goal of earning the public's trust through improved performance, real reductions must occur. Therefore, this Code has measurable implementation stages and industry trends data submission requirements.

7. Does this Code apply to both large and small companies and facilities? Is there a threshold below which this Code does not apply?

**Answer:** The Code applies to all members of CMA. Even a small company or facility can generate wastes and releases to the environment. There is no threshold for volume of wastes generated, releases to the environment, or size of facility below which this Code does not apply. Each company/facility will establish its own priorities. The Code envisions progress by all of industry in reducing wastes and releases.

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Questions & Answers about the  
Waste & Release Reduction Code  
April 10, 1990

8. Does this Code apply to domestic or world-wide operations?

**Answer:** The principles behind the Code are universal in concept. The reduction of wastes and releases is good business and good citizenship. However, for purposes of CMA eligibility requirements, the Code applies to that portion of a corporation or company that is used to determine CMA dues.

9. What about multi-divisional companies? Does this Code apply to mining operations? Service stations? Warehouses?

**Answers:** Adherence to the Code of Management Practices is a Guiding Principle of the Responsible Care program. The Responsible Care program is a membership requirement for those portions of a company that determine the CMA dues structure. The principle of reducing wastes and releases is responsible corporate behavior and should be encouraged throughout an organization.

The Waste and Release Reduction Code of Management Practice is designed for flexible implementation by companies and facilities. Each company/facility must determine the reduction opportunities, priorities, baseline, and implement the reduction plan in accordance with these company/facility-derived goals. Inherent in this Code is the need to communicate with the public when determining reduction opportunities and priorities. Therefore, while the scope of this policy is broad, each company must identify the sources that are included in its implementation activities as well as the priority and timing for these reduction activities.

10. If all of the chemical industry is to be affected, how do we ensure fair and equitable reductions? How do we prevent competitive disadvantages among CMA member companies?

**Answer:** The Waste and Release Reduction Code is predicated on making reductions that are economically and technically sound. The Code does not envision enforcing competitive disadvantages on member companies by usurping their decision-making processes. Each company must evaluate its own reduction opportunities and develop its own reduction plan to meet company/facility priorities.

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Questions & Answers about the  
Waste & Release Reduction Code  
April 10, 1990

11. If all of the chemical industry is to be affected, how do we ensure fair and equitable reductions? How do we prevent competitive disadvantages with other industry segments?

**Answer:** This Code will actually make our industry more competitive than those that do not embrace its concepts. Waste and release reductions will result in less wastes, improved efficiency, and make the industry a superior competitor.

12. Is this a non-growth Code? How can this Code be reconciled with the need for expansions? How are opportunities for emission offsets (needed for air permitting) to be preserved?

**Answer:** This Code envisions a long-term, substantial downward trend in total releases to the environment and waste generation. However, the method of achieving reductions is left to the needs and priority determinations of the individual member companies.

The policy is not a no-growth policy; rather, it is a policy of balancing future expansions with future waste and release reductions.

Voluntary waste and release reductions may be eligible to be banked with appropriate governmental agencies. Any plan for waste and release reductions must also plan to accommodate expansions. Public perceptions may ultimately require a waste and release reduction type program just as a condition to be able to construct or expand. Several states already have proposed such regulations.

13. Won't this Code have enormous economic consequences?

**Answer:** Waste and release reductions may or may not have a huge price tag. Some reduction projects, like fugitive emission abatement, tend to pay for themselves in recovered product(s); other projects may increase the price of doing business. Industry must be willing to invest in plants that will lead to a future with less wastes and fewer releases to the environment. The goal of Responsible Care is that the chemical industry will improve the performance of its operations constantly.

In making reduction progress, each company must look at all the reduction opportunities and set their own priorities. Each company can set the scope of these priorities broadly or narrowly and implement actions at their own pace.

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Questions & Answers about the  
Waste & Release Reduction Code  
April 10, 1990

14. Does the hierarchy of reduction methodologies mean that all projects must use source reduction unless it is technically infeasible?

**Answer:** Each waste and release source must be evaluated for its reduction potential. The hierarchy requires that reduction projects for source reduction be evaluated before recycle/reuse or treatment. However, the project to be implemented will depend on the evaluation.

Technical infeasibility is only one of several facility and/or waste specific criteria that can lead to selection of a reduction project involving recycle/reuse or treatment. When developing their reduction priorities, companies may choose to consider other criteria including risk/benefit mechanisms, public concern, size of the facility, economics, and other factors such as conservation of resources.

Each company must identify its own reduction priorities and implement a reduction plan to meet company/facility-set goals.

15. This Code, as well as other codes under the Responsible Care program, require ongoing dialogues with employees and members of the public. Does each such Management Practice require a separate meeting?

**Answer:** No. Meetings with employees or the public can have multiple agenda items. If several Management Practice items are to be covered in a single meeting, all that is required is that the agenda and presentation clearly address each topic, rather than have a general "discussion of topics."

Under the Responsible Care Program, the process to communicate with the public and employees is established under the Community Awareness and Emergency Response (CAER) Code of Management Practice. Companies are encouraged to use the mechanisms set up under other codes to enhance effective implementation of the Responsible Care Program and to better use and conserve company resources.

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Questions & Answers about the  
Waste & Release Reduction Code  
April 10, 1990

16. Is dialogue with the public required for all facilities?

**Answer:** Meaningful dialogue is essential to better understanding public concern, improving the public's understanding of our operations, and building trust. Some facilities, due to size and location, may have limited opportunity for such dialogue. Where the opportunity for dialogue exists, even on a limited basis, it should be actively pursued individually or jointly with other neighboring companies/facilities.

17. Should individual companies and/or facilities submit to CMA the rationale behind the annual Industry Trend data submissions?

**Answer:** No. The data submitted for the Industry Trend Data reports need not have supporting documentation submitted to CMA. However, when discussing these data with the local public, it is assumed that general methods and assumptions will be discussed as part of the public education and dialogue process.

18. When completing the Self-Evaluation Form, must every facility attempt to progress through all the implementation stages, or can some facilities "mature" their progress in code implementation at less than full implementation?

**Answer:** All participating facilities should work to achieve full implementation of each Code and embrace the concepts of this Code in the spirit of the Responsible Care Guiding Principles. Depending on the size of a particular facility or the activities carried on by that facility, a company may decide that different implementation methods are appropriate. For example, a large facility may use formal procedures such as written policies and manuals and conduct formal employee meetings. Whereas, a smaller facility can accomplish the same implementation using less formal methods.

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# IMPLEMENTING THE WASTE AND RELEASE REDUCTION CODE OF MANAGEMENT PRACTICE

A Bibliography of Selected Resources

## 1. Program Development:

### A. MINIMIZATION PROGRAMS

#### *Key References:*

#### I. CMA Waste Minimization Resource Manual. 1989.

CMA Member \$ 40.00; Non-member \$ 60.00.

A manual to assist readers to develop and implement Waste Minimization Programs.

#### II. U.S. Environmental Protection Agency, Hazardous Waste Engineering Research Laboratory and Development. Waste Minimization Opportunity Assessment Manual. Cincinnati, OH, July 1988.

#### *Other Selected Readings:*

American Chemical Society, Less is Better, Laboratory Chemical Management for Waste Reduction. 1985.

Air and Waste Management Association (AWMA, formerly APCA the Air Pollution Control Association, Waste Minimization, Pittsburgh, PA. 1990. (AWMA Order Code SP-67).

*AWMA Member \$ 35.00; Non-member \$ 50.00.*

Proceedings of an AWMA international specialty conference on pollution prevention.

Air and Waste Management Association (AWMA, formerly APCA the Air Pollution Control Association, edited by H. M. Freeman, Hazardous Waste Minimization: Industrial Overviews, Pittsburgh, PA. 1989. (AWMA Order Code RS-14). *AWMA Member \$ 20.00;*

*Non-member \$ 30.00.*

A collection of articles, reprinted from the Journal of the Air & Waste Management Association, that summarize minimization efforts in selected industries.

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Air and Waste Management Association (AWMA, formerly APCA the Air Pollution Control Association, Regulatory Approaches for Control of Air Pollutants, Conference held in Atlanta, GA, February 1987.

Congress of the United States, Office of Technology Assessment, From Pollution to Prevention: A Progress Report on Waste Reduction, U.S. Government Printing Office, Washington, DC, June 1987. (GPO stock number 052-003-01071-2; Price \$ 2.75.)

Congress of the United States, Office of Technology, Serious Reduction of Hazardous Waste, U.S. Government Printing Office, Washington, DC, September 1986. (GPO stock number 052-003-01048-8; \$ 12.00.)

ICF Technology Incorporated, New York State Waste Reduction Guidance Manual U.S. Environmental Protection Agency, Office of Pesticides, Fairfax, VA, March 1989.

National Association of Manufacturers' (NAM), Waste Minimization: Manufacturers' Strategies for Success, Washington, DC, 1989.

#### ***B. RELEASE ESTIMATION AND ASSESSMENT***

##### ***AIR***

Chemicals in the Community: Implementing Regional Air Monitoring Programs. 1989. CMA Member \$ 20; Non-member \$ 40.

A manual to assist companies establish regional air monitoring programs. This document covers both the policy issues and the technical details of setting up a regional air monitoring project.

Chemicals in the Community: Methods to Evaluate Airborne Chemical Levels. 1988. CMA Member \$8.00; Non-member \$12.00.

A resource document presents two general approaches for placing emission levels in context: data-base driven and model driven. Using these two approaches, 8 methods, are described to evaluate the health impact of airborne releases.

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McNaughton, Daniel J., Marshall A. Atwater, Paul M. Bodner, and Gary G. Worley, Evaluation and Assessment of Models for Emergency Response Planning: TRC Environmental Consultants, Inc. TRC

Project No. 3088-R31. East Hartford, CT. April 1986. *FREE.*  
*available from CMA.*

A CMA-funded report evaluating the use of air dispersion models during accidental releases.

#### Fugitive Emission Workshop Videotapes

These videotapes cover some of the topics plant personnel ask about when setting up a testing program for equipment leak, detection, and repair (LDAR).

|                    | Minutes | CMA Member | Non-member |
|--------------------|---------|------------|------------|
| Tape I: Overview   | 42      | \$75.00    | \$112.50.  |
| Tape II: Screening | 58      | 75.00      | 112.50.    |
| Tape III: Bagging  | 38      | 75.00      | 112.50.    |
| All Three Tapes    |         | 225.00     | 337.50.    |

All tapes are available in 1/2 and 3/4 inch formats.

#### Improving Air Quality: Guidance for Estimating Fugitive Emissions from Equipment. 1989. CMA Member \$20.00; Non-member \$30.00.

A guidance manual of fugitive emission testing for plants that want to conduct accurate leak rate estimations. This manual includes the EPA protocol with notations for implementation by the chemical industry.

#### PAVE Software (Programs for Assessing Volatile Emissions.) 1990. Member: TBA; Non-member: TBA

PAVE is CMA's secondary emissions modeling system. It consists of three programs on two 5 1/4 inch floppy discs and a user's manual. PAVE can estimate emissions from:

- o Surface Aeration Basin
- o Subsurface Aeration Basin
- o A Variety of Pool Scenarios.

#### POSSEE Software: (Plant Organizational Software System for Emissions from Equipment.)

CMA Member \$150.00; Non-member \$225.00.

POSSEE is a software data entry system for fugitive emissions testing designed exclusively for CMA. POSSEE can help you set up a testing program, enter data, and develop estimates of the fugitive emissions at your plant.

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**Improving Air Quality: A Guide to Estimate Secondary Emissions.** In Publication. CMA Member \$45.00; Non-member \$100.00.

A guidance manual for estimation emissions from secondary air sources for SARA 313 reporting.

***WATER/GROUNDWATER***

**Biomonitoring Work Group Educational Package** *FREE.* 1987.

A CMA resource manual identifying and discussing pertinent topics about biomonitoring.

**Groundwater Protection Program.** *FREE*

A 21 page booklet that outlines some of the principles and considerations to address when establishing a groundwater protection program.

***C. EPA TRI INFORMATION***

U. S. Environmental Protection Agency, Office of Toxic Substances, **Toxic Chemical Release Inventory Reporting Form R and Instructions EPA.** 560/4-90-007. Washington, DC. January 1990.

U. S. Environmental Protection Agency, Office of Toxic Substances, **Toxic Chemical Release Inventory Reporting Package for 1989.** 560/4-90-001. Washington, DC. January 1990.

U. S. Environmental Protection Agency, Office of Pesticides and Toxic Substances, **Toxic Chemical Release Inventory, Risk Screening Guide,** Volumes 1--The Process; Volume 2--Appendices. EPA 560/2-89-002. Washington, DC. July 1989.

A two volume set to aid industries completing the SARA Toxic Release Inventory.

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U.S. Environmental Protection Agency, Office of Pesticides and Toxic Substances; Estimating Releases and Waste-Treatment Efficiencies for the Toxic Chemical Release Inventory: Section 313, Title III of Superfund Amendments and Reauthorization Act of 1986. EPA 560/4-88-02. Washington, DC,. December 1987.

U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory and APCA - Air Pollution Control Association, Proceedings of the 1987 EPA/APCA Symposium on Measurement of Toxic and Related Air Pollutants, APCA Publication VIP-8. Pittsburgh, PA. May 1987.

**D. PROCESS SAFETY**

Evaluating Process Safety in the Chemical Industry--A Manager's Guide to Quantitative Risk Assessment. June 1989.  
(CMA members \$ 10.00; Non-members \$ 15.00.)

CMA's 50 page booklet to inform chemical process industry managers about the criteria for determining when quantitative risk assessment will aid in decision making.

Process Safety Management (Control of Acute Hazards). May 1985.  
\$ 5.00

A 50 page booklet reviewing and evaluating systematic approaches to process safety analysis in the chemical industry.

Safe Warehousing of Chemicals. A Resource Manual. June 1989.  
(CMA Members \$ 10.00; Non-members \$ 15.00.)

A 40 page resource manual that provides the warehouse manager with a summary of pertinent safety elements for consideration when warehousing chemicals.

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# IMPLEMENTING THE WASTE AND RELEASE REDUCTION CODE OF MANAGEMENT PRACTICE

## A Bibliography of Selected Resources

### 2. Communication:

**Advisory Panels: Options for Community Outreach.** 1990.

CMA Member \$ 20.00; Non-member \$ 30.00.

A booklet that offers suggestions and resources for developing and implementing a community advisory panel.

Houston Regional Monitoring Network & Radian Corp., **An HRM Presentation to the Joint Select Committee on Toxic Air Emissions and the Greenhouse Effect.** Austin, TX. January 1990.

**Risk Communication, Risk Statistics & Risk Comparisons** 1988.

CMA Members \$ 6.00; Non-members \$ 9.00.

A 60 page manual that gives examples of how to discuss risk with a general audience.

**Risk Communication, Risk Statistics & Risk Comparisons** 1988.

(EXCERPTS). CMA Members \$ 6.00; Non-members \$ 9.00.

An abridged version of the above.

**Seven Cardinal Rules of Risk Communication** 1988. *FREE*

A pamphlet written by the US EPA to guide successful risk communication efforts.

**Talk About Risk.** \$ 45.00

A 15 minute videotape that outlines steps to a successful risk communication program.

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**Title III: One Year Later, Plant Manager Interviews.** June 1989.  
FREE.

CMA's report outlining the result of interviews with 20 plant managers who initiated and maintained successful community outreach activities.

**Title III Community Awareness Workbook.** January 1988.  
CMA Members \$ 17.50; Non-members \$ 26.25.

A 74 page, three-hole punched manual to help plant managers prepare communications programs.

US EPA, **Explaining Environmental Risk.** 1986. FREE.

A 25 page booklet on risk communication written by Peter Sandman of Rutgers University in cooperation with EPA and CMA offers tips on how to explain risk to the media and the public. Includes bibliography of other sources of risk communications information.

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A Bibliography of Selected Resources

### 3. Impact Evaluation:

**Chemicals in the Community: Methods to Evaluate Airborne Chemical Levels.** 1988. CMA Member \$8.00; Non-member \$12.00.

A resource document presents two general approaches for placing emission levels in context: data-base driven and model driven. Using these two approaches, 8 methods, are described to evaluate the health impact of airborne releases.

**Chemicals in the Community: Understanding Atmospheric Fate.** May 1990.  
*CMA Member \$ TBA; Non-member \$ TBA.*

A booklet to provide a wider understanding of the basic principles of atmospheric fate including nomenclature and mechanisms.

Houston Regional Monitoring Network & Radian Corp., **A Method for Assessing Community Exposure to Selected Volatile Compounds.**  
Austin, TX. January 1990.

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THIS PAGE IS FOR NOTES.

## **SOURCES FOR DOCUMENTS**

### **Waste and Release Reduction Code of Management Practices**

**CMA Printed Materials are Available from the:**  
**Chemical Manufacturers Association**  
Publication Fulfillment  
2501 M St NW  
Washington, D.C. 20037.

Air and Waste Management Documents are available from the:  
Air and Waste Management Association  
P. O. Box 2861  
Pittsburgh, PA 15230.

Office of Technology Assessment Documents are available from the:  
Superintendent of Documents  
Government Printing Office.  
Washington, D.C. 20402-9325.

NAM Documents are available from the:  
Publications Coordinator  
National Association of Manufacturers  
1331 Pennsylvania Ave. NW  
Washington, DC 2004-1703.

ACS Documents are available from the:  
American Chemical Society  
Dept. of Governmental Relations and Science Policy  
1155 16th Street, NW  
Washington, DC 20036.

EPA Documents are available from the:  
U.S. Environmental Protection Agency  
Office of Toxic Substances  
401 M Street, SW  
Washington, DC. 20460.

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| CMA Waste Minimization Resource Manual                                                               | \$ 40.00         | 60.00            | _____    | _____ |
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| Risk Communication, Risk Statistics & Risk Comparisons                                               | \$ 6.00          | 9.00             | _____    | _____ |
| Risk Communication, Risk Statistics & Risk Comparison (EXCERPTS)                                     | \$ 6.00          | 9.00             | _____    | _____ |
| Evaluating Process Safety in the Chemical Industry: A Managers Guide to Quantitative Risk Assessment | \$ 10.00         | 15.00            | _____    | _____ |
| Process Safety Management                                                                            | \$ 5.00          | 5.00             | _____    | _____ |
| Safe Warehousing of Chemicals                                                                        | \$ 10.00         | 15.00            | _____    | _____ |
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| Title III Community Awareness Workbook | \$ 17.50         | 26.25            | _____    | _____ |
| Explaining Environmental Risk          | FREE             |                  | _____    | _____ |

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