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PETER MAGGIORE
SECRETARY

Certified Mail
Return Receipt Requested

October 15, 1998

Mr. David A. Gurule, Area Manager
Los Alamos Area Office
Department of Energy
528 35th Street, MS A100
Los Alamos, New Mexico 87544

Dr. John C. Browne, Director
Los Alamos National Laboratory
P. O. box 1663, MS A100
Los Alamos, New Mexico 87545

Re: Waste Minimization/Pollution Prevention requirements for the General Part B Permit Application

Dear Mr. Gurule and Dr. Browne:

At the waste management monthly meeting of September 15, 1998, DOE/LANL requested that HRMB provide some guidance on incorporating waste minimization/pollution prevention into the general part B permit application.

DOE/LANL requested that the waste minimization/pollution prevention requirement be moved from the HSWA module into the General part B permit. This is acceptable to HRMB. In response to the request for guidance the following is relevant: (taken from draft position paper entitled "Permit Requirements for Waste Minimization/Pollution Prevention")

The basis for requiring waste minimization/pollution prevention plans in a RCRA Part B permit is the RCRA requirement that pursuant to 20 NMAC 4.1, 40 CFR 264.73(b)(9)

"the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment."

The permittee shall meet this requirement when applying for or renewing a RCRA Part B permit in the following way:



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1. Develop and implement a systemic plan equivalent to the Green Zia Program for Environmental Excellence which will show a measurable reduction in hazardous waste (and mixed waste if applicable) generating processes. Attached is the Green Zia draft program guidance and draft program criteria.
2. The plan must identify all the material inputs and waste from production processes.
3. The plan must describe a method that identifies all applicable regulations and costs associated with the hazardous and mixed waste generating processes.
4. The plan must describe a process which incorporates problem solving to identify appropriate alternatives for waste minimization/pollution prevention implementation.
5. The permittee shall report annually on the results of implementing the waste minimization/pollution prevention plan. The report shall also describe the improvement goals for the coming year.

Should you have any questions regarding this letter, please contact me or Mr. John Kieling, HRMB's LANL Facility Manager, at (505) 827-1558.

Sincerely,



Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau

BJG:lw

CC w/ attachments:

J. Ellvinger, LANL ESH19, MS K490
J. Kieling, NMED HRMB
L. Winn, NMED HRMB
H. LeDoux, DOE LAAO, MS A316
D. Neleigh, EPA, 6PD-N
J. Plum, DOE LAAO, MS A316
File: Reading and RED LANL G/P '98
Track: LANL, 10/15/98, na, DOE/LANL, HRMB/Garcia, RE, File

The Green Zia Environmental Excellence Program

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Program Information and Application Criteria



"It is not possible to repeat too often that waste is not something which comes after the fact...picking up and reclaiming scrap left over after production is a public service, but planning so that there will be no scrap is a higher public service."

Henry Ford, 1924

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The Green Zia Environmental Excellence Program

*Assuring a healthy environment and a
healthy economy for New Mexico*

Introduction

The Green Zia Environmental Excellence Program is a voluntary program designed to support and assist all New Mexico businesses, from the largest facility to the smallest corner business, achieve environmental excellence through pollution prevention-based environmental management systems. This program is administered by the New Mexico Environmental Alliance, a partnership of state, local and federal agencies, academia, private industry and environmental advocacy groups. The basic premise of the Green Zia Environmental Excellence Program is that waste is the result of inefficiency and by reducing waste, a company can increase its profits. The environmental benefit is clear: waste that is never created does not pollute.

Who Should Participate in This Program ?

Any business, organization or community can participate in the Green Zia Environmental Excellence Program, regardless of size. This program applies to large and small manufacturers, government agencies, cottage industries, small businesses, large businesses, mines, agricultural operations, oil and gas operations, oil refineries, consultants, service sectors, contractors, realtors, restaurants, health care providers, schools, universities, community colleges, golf courses, research laboratories, landscape and building designers, retail businesses and any other business that generates any kind of waste. Any business that generates waste can strive for environmental excellence.

Communities can use the Green Zia Environmental Excellence Program to work with local businesses to meet overall environmental and economic sustainability goals. The Green Zia Program assessment tools are fun and easy-to-use and can be used by local governments, community groups, economic development organizations and environmental groups.

The Green Zia Environmental Excellence Program is a multi-year program that emphasizes continuous improvement. A company or organization that works through the Green Zia Program from the beginning "Commitment" level through to the Green Zia Environmental Excellence Award, will gain a thorough understanding of environmental issues. The company will also establish a system that helps them address environmental issues in cost-effective ways, based on sound business practices. Participants that achieve the Green Zia Environmental Excellence Award will be on par with national environmental leaders and will be able to demonstrate that companies can profit from good environmental performance.

What is Pollution Prevention?

Simply put, pollution prevention means not creating a waste in the first place. Pollution prevention is achieved by the efficient use of resources, including raw materials, energy, water and even time and distance. Efficient use of materials includes the *amount* of the material used, the *type* of material used, and *how* or even *why* the material is used or handled in the process. The goal is to produce a product or deliver a service as efficiently as possible, with the least amount of wasted materials.

Pollution prevention translated into business or manufacturing language means many things: loss prevention, waste reduction, improved efficiency, materials conservation, water conservation, energy efficiency, hazard reduction, manufacturing efficiency, just-in-time manufacturing, scrap reduction, inventory control, good housekeeping, formulation efficiency, world class manufacturing, inventory waste reduction, batch maximization (or optimization), quality improvement, quality maximization, "zero inventory", globally competitive, "zero emissions", "zero defects", continuous improvement. *The bottom line is that pollution prevention or improved efficiency can help businesses save money and help protect the environment at the same time.*

What is Environmental Excellence?

Environmental excellence means moving beyond mere compliance with environmental, health and safety regulations by establishing an environmental management system that incorporates pollution prevention into core business practices. A prevention-based environmental management system will help a business identify *all* the environmental compliance and health and safety concerns and costs associated with a waste generating process and then use prevention approaches to reduce or eliminate the waste and reduce the associated costs. A systematic approach is holistic and examines all

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environmental media: air, water, waste, and health and safety, so that an improvement in one area is truly preventive and does not just shift pollution or risk to another area. This system will also work well for businesses that do not use regulated materials but still generate waste such as packaging, office paper, food wastes and other waste materials that typically go to the local landfill.

In the Green Zia Environmental Excellence Program, attention is focused on the *process* that generates the waste, not the waste. Identifying and implementing process improvements will reduce waste and costs. This is a major shift from the traditional, reactionary approach that concentrates only on managing wastes or pollutants already created to an anticipatory approach that concentrates on prevention of wastes or pollutants to improve environmental and economic performance. This prevention-first environmental management system will identify cost-effective ways to achieve "beyond compliance" status, creating a win-win situation between economics and environment.

A prevention-based environmental management system relies on thorough knowledge of processes and a structure for continuous improvement to reduce or eliminate wastes. A well-designed system incorporates leadership; planning; customers and suppliers; accurate and detailed process, product and financial information; employee input; process analysis; problem solving; decision-making; and measurement of results. A company with this kind of system in place is well on its way to environmental excellence.

What is the Green Zia Environmental Excellence Program?

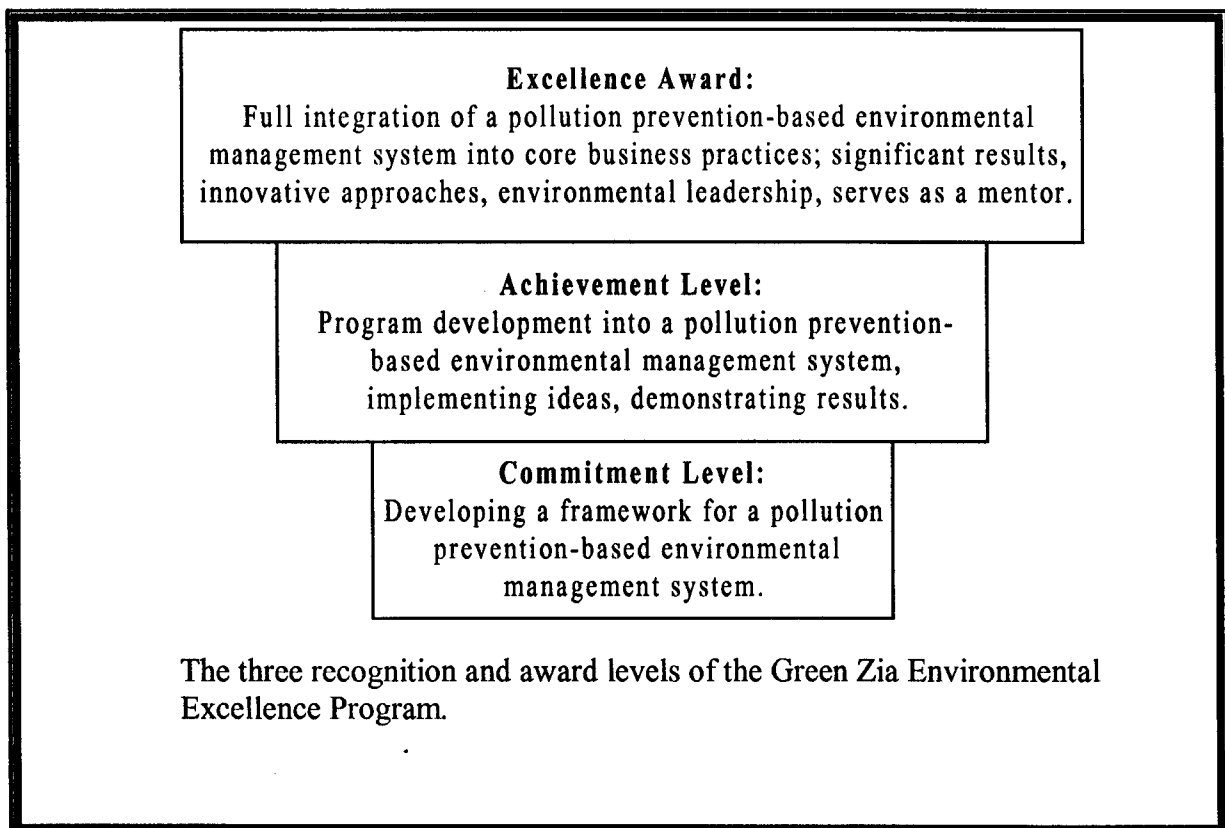
The Green Zia Environmental Excellence Program is a public recognition program that acknowledges and supports businesses that wish to move towards environmental excellence and long term environmental and economic sustainability. Green Zia Awards are given in three categories, based on the degree of development and implementation of a prevention-based environmental management system. Awards are given annually. Businesses are encouraged to work through progressively higher levels of the program from Commitment Level to Achievement Level, culminating in the Governor's Green Zia Environmental Excellence Award.

Commitment Level: The company's management has made a strong commitment to prevention and the company has established a basic system for process analysis, problem solving and decision making that will lead to implementation of pollution prevention opportunities. No measurable results are expected at this level, the focus is on development of the company's program. Winners at this level receive a Green Zia Commitment certificate.

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Achievement Level. The company has a prevention-based environmental management system in place and can show measurable success. This level demonstrates progress in program development and expansion into more areas of the company, including suppliers. Measurable results are expected at this level. Winners at this level receive use of a window sticker and the use of the Green Zia logo for use in advertising.

Governor's Green Zia Environmental Excellence Award: The company has a fully integrated prevention-based environmental management system in place. Companies at this level can demonstrate full integration of prevention concepts throughout all areas of the company from line staff to the business office to management. At this level, the company can demonstrate significant process improvements, waste reduction and innovative approaches to their environmental issues. Companies at this level also show significant environmental leadership in their communities. Companies that have achieved this level have expanded their leadership role to the community in terms of mentorship of other businesses, siting that considers community issues such as environmental justice and Brownfields Redevelopment and sponsorship of community events. Winners at this level receive the Green Zia Environmental Excellence Award.



Application Process

Applications are submitted to the Green Zia Environmental Excellence Program. Applications for the 1999 Green Zia Environmental Excellence Awards are due by February 15, 1999. Applicants can apply at any of the three levels. It is important that a company apply to the appropriate level it can achieve. This is a multi-year program that stresses continuous improvement: companies are strongly encouraged to apply at progressively higher levels of the Green Zia Environmental Excellence Program. For example, a company may receive the "Commitment" level recognition the first year. The next year is spent developing the program and implementing opportunities and showing progress. The company then applies for the "Achievement" level recognition the second year and so on until the company receives the Green Zia Environmental Excellence Award. A company can apply for any level as many times as it takes to win the level. A company may receive the "Commitment" level recognition twice and the "Achievement" level twice. A company that has received the Green Zia Environmental Excellence Award will be a company on par with national leaders in environmental excellence.

Review Process

Applications for the Green Zia Environmental Excellence Program are reviewed by a panel of volunteer reviewers. All information in the application remains completely confidential. Reviewers with any conflict of interest with a particular company must excuse themselves from the Review Team. The Review Team uses the Green Zia Award Criteria to review and score the application and prepare a feedback report that is provided to the applicant at the Awards Ceremony. The Feedback Report provides detailed information on the application including strengths and areas for improvement. The Feedback Report is an invaluable asset to a company as it provides insights from an outside team of experts in prevention. The final award determinations are made by a panel of judges. Final awards will be presented at the Green Zia Awards Ceremony during Earth Day Week, 1999.

The Green Zia Tools:

The Green Zia Program provides tools to establish a basic, systematic prevention-based environmental management system. The tools consist of the "Systems Approach to Pollution Prevention"¹ and a simplified version for small businesses, the "Nothing to Waste" Program². These tools provide a basic framework for an on-going prevention program. A company is not required to use these tools to apply for an award, however, the use of these tools will satisfy the basic requirements of the Green Zia Program at the Commitment Level. These are generic, structured analysis tools that include process analysis, financial and regulatory analysis, problem solving and decision making through the development of action plans. These tools can be used by any type of company from a small, one-person clothing shop to a major manufacturer or federal facility.

Green Zia tools:

Tool 1: Process Mapping: Determines the steps materials pass through as they are transformed into final product. Maps allow for the identification of all inputs and outputs from a process, making wastes or losses evident.

Tool 2: Activity-Based Costing: This tool helps identify key losses and the dollar value of these losses. This tool identifies the true costs of wastes or losses and helps participants identify areas to target for pollution prevention.

Tool 3: Root Cause Analysis: A cause and effect diagram is prepared so that participants can see why and where the losses occur in the process. Understanding why and where the loss occurs will help participants focus on developing appropriate alternatives to reduce or eliminate the loss.

Tool 4: Brainwriting: This exercise is designed to help participants generate as many alternatives as possible to minimize loss.

Tool 5: Bubble-up-bubble-down: This is an evaluation method used to rank alternatives to determine the optimal solution. Factors such as cost, ease of implementation and effectiveness are considered in evaluating and ranking the alternatives.

¹ The "Systems Approach to Pollution Prevention" was developed by Dr. Robert Pojasek, President of Pojasek and Associates.

² The Green Zia Nothing to Waste manual was adapted from the Nothing to Waste Program which was originally developed as a project of Working Capital, Grove Hall NDC, Green Island/Vernon Hill CDC, Tufts University New England Environmental Network, Cambridge Environmental, Inc and Dr. Robert Pojasek with funding provided by the US Environmental Protection Agency.

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Tool 6: Action Plan: The Action Plan details each step that need to be taken to implement the alternative and reduce or eliminate the loss from the process.

The prevention-based environmental management system of the Green Zia Program will serve as an invaluable resource for your company. The process maps can be used to identify efficiency opportunities beyond the Green Zia Program. The list of alternatives generated in Tool 4 becomes a list for continuous improvement opportunities. Through the Green Zia Program, you can measure the results of your efforts from both a waste reduction and a cost standpoint. This program will help you improve your operations and all decisions are made on the basis of economics and environmental considerations. Companies that implement pollution prevention programs understand the value of waste reduction and never go back to “business as usual”.

Training in the Green Zia tools is offered periodically. Please call for the next training opportunity in your area or to set up training in your community or business.

Eligibility

Any company, community or organization that operates in the State of New Mexico can apply for the Green Zia Environmental Excellence Program.

Businesses are encouraged to work with the free technical assistance programs through the New Mexico Environment Department, the City of Albuquerque and the Green Zia Technical Resource Center to answer compliance questions or to implement pollution prevention opportunities.

Core Values and Criteria

These core values are the basis of environmental excellence. These core values and criteria should be addressed in the Green Zia Environmental Excellence Program application.

Introduction

Applicants must address the Green Zia Core Values and Criteria as they prepare their applications. Core Values are the guiding principles or essence of the program. The Green Zia Award Criteria form the infrastructure upon which an application is evaluated. In addressing these criteria, a demonstration of the acceptance of the Core Values throughout the application is critical if the pollution prevention program is going to be successful.

Core Values = Principles
Criteria = Infrastructure

The Core Values are:

- Management Commitment
- Efficient Product, Service and Process Design
- Employee Value
- Partnerships
- Continuous Improvement and Learning

Management Commitment

Management commitment and leadership are one of the most important aspects of the Green Zia Environmental Excellence Program. Environmental

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excellence requires strategies that set environmental performance goals that go beyond mere compliance with environment, health and safety regulations. This is a shift to a prevention-first philosophy for environmental performance instead of focusing solely on waste management. Management commitment at the highest levels is essential for aligning company goals and resources towards prevention. Leadership sets the vision of continuous improvement for using resources, including raw materials, energy and water, efficiently and responsibly, improving both the environmental and economic performance of the company.

Leadership clearly conveys the company's environmental values to all employees so that individuals understand their role and what they can do in their jobs to make the company environmentally sustainable based on sound economic principles. As well, prevention practices create a safer working environment and cleaner communities for employees and their families, demonstrating that the company values the employees' well being. Leadership can demonstrate this commitment to prevention through personal involvement, a strong policy statement and through employee incentives.

Leadership also shows strong commitment to environmental excellence by providing adequate financial and human resources to assure implementation of action plans. As well, leadership also regularly reviews action plans designed for prevention or resource efficiency to monitor progress and provide support.

Leadership takes a long-term view of the future regarding community environmental and economic sustainability. Production processes designed to have no adverse effects on the environment contribute to community sustainability. Companies that incorporate pollution prevention throughout their operations often have employees that practice good environmental stewardship at home and in their community. Responsible and efficient use of resources such as water and energy can contribute to a stronger local economy as well as relieve pressures on availability of scarce resources. As well, leadership considers the life-cycle effects of a product beyond the production phase to minimize long term environmental problems that affect consumers and community. Products and processes are designed to move towards "zero defects" and "zero wastes". "Zero waste" and "zero defects" are long-term, visionary goals that can be reached through continuous improvement. A systematic approach will help move the company to this realistic goal over a period of years.

Leadership also includes sponsorship of environmental activities, mentorship of other businesses, partnering on innovative regulatory approaches, creating a "shared learning" and consideration of the social consequences of company decision in terms of environmental justice, community redevelopment and Brownfields. Another aspect of leadership is clear and open communication

with the community on the company's environmental performance, its goals for improvement and its overall affect on community health and safety.

Efficient Product, Service and Process Design

Good business through design anticipates the environmental impacts of a company's activities, production processes and the product. Efficient processes will generate less pollution through thoughtful design and continuous improvement. Design that considers and minimizes the life cycle impacts of the product after it leaves the factory, including packaging, will result in cleaner communities and increased customer satisfaction. A company that delivers a service in the most efficient manner will create less waste. A company may identify waste reduction opportunities outside of production processes and products by looking at how it does business in other areas of the company, such as in the business office or in packaging or transportation.

Good design considers efficient use of all resources that are required to produce a product or deliver a service. This includes water, energy, and raw materials. Reduction in cycle time and production line distance reduce waste and increase productivity. As well, process simplification may also reduce waste. Support activities such as tank clean-outs, washing of glass wear, waste management, lighting and heating and cooling, transportation and storage of materials are also considered. Packaging of raw materials used to make the product and packaging of the final product are another areas to look for reduction opportunities. As well, the lifetime and dependability of machinery and right-sizing of equipment can result in waste reduction. The goal is to make as much product as possible with the same amount of starting materials as efficiently as possible and create a product that will operate well with few or no environmental, health and safety impacts through its life.

Good business through design addresses cost savings and cost avoidance through preventing problems and reducing waste at the design stage which are usually more significant than through correcting problems and managing wastes that occur downstream. A full understanding of the cost of a waste or production process will help rank order opportunities for improvement based on good business principles. Good design considers full cost/benefit analysis for prioritizing improvements. This includes activity-based costing which identifies hidden costs of regulation, product specifications and customer requirements often assigned to overhead costs. Risk reduction is also an area to consider in the cost/benefit analysis. A good understanding of all the costs will lead to better business decisions and reduction of overhead costs will improve the overall profitability of the company more than only reduction of direct costs.

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Good business through design requires a system in place for understanding and analyzing the functionality of processes and identifying and targeting areas for improvement. The system incorporates process analysis, problem solving and decision-making for continuous improvement. Thorough understanding of the function of a process will help employees pinpoint the root cause of a waste or efficiency problem. Once employees agree on the root cause of the problem, they can work together to generate creative ideas to improve the process or service. Input from vendors, customers and suppliers are also important in designing efficient processes and quality products. As well, benchmarking against competitors or similar processes in different sectors should be incorporated into overall process and product design.

Good business by design means working with customers to gain feedback on product quality and performance. For example, spending time with customers who are using the product to see how the product can be delivered in a better way that requires less packaging or results in fewer defects.

Product design should consider the overall impacts of the product and its packaging on the environment in terms of resources required to produce the product as well as its expected life, performance without failure and what happens to the product material when it is no longer functional. Product design should consider reuse potential and the ability to easily and profitably dismantle and recycle components of the product. Other considerations include the ability of the material to break down into environmentally beneficial materials such as compost or at the very least, if the product requires disposal, that it breaks down into environmentally benign materials to eliminate persistent or long term environmental problems.

Good business by design should also consider high value reuse opportunities for waste products not eliminated through process efficiency improvements. Waste products should be evaluated for high-value product potential so that waste streams become another lucrative revenue source for the company. In other words, can the company make high value products out of its own waste material? Waste materials that cannot be incorporated into another product should then be recycled.

Employee Value

A company on its journey to environmental excellence demonstrates the value of the employee by creating a safe and healthy workplace and by seeking active employee input and participation in product and process design.

The company encourages employee learning, participation, innovation, and creativity and builds employee knowledge of overall operations and processes and how they link and support each other. Employees are involved in all aspects of the prevention program through process analysis, problem solving and decision making.

A prevention-based environmental management system creates a framework for employee involvement in process analysis, problem solving, development of alternatives and action plans and implementation on a continuous basis. As well, this system helps improve employees' knowledge of risks and health and safety concerns in the workplace.

The company encourages employee pride in environment and builds employee incentives to reward good ideas and participation. The company assures that employee training needs are identified and met to assure quality participation. The company also provides proper facilitation support to help employees use process analysis, problem-solving and decision-making tools to support the prevention program. As well, the company communicates its environmental ethic to all employees and develops procedures that support this ethic.

Employees are encouraged to work in the community to support environmental improvement projects as part of communicating the company's ethic to the public.

Partnerships

The company develops partnerships internally to create networks to improve flexibility, responsiveness and knowledge-sharing throughout the company to move towards the goal of environmental excellence. The company also develops external partnerships with suppliers, vendors and customers to get input into process improvements and product development. For example, a company may develop a partnership with a major supplier to deliver goods with less packaging.

The company creates partnerships to meet the goal of excellence in delivery of services and production and product design. The company can also work with partnerships to communicate its environmental ethic, extending the idea of environmental excellence to customers, employees, vendors, contractors and suppliers. For example, a company may require that a contractor working on a site project also participate in the Green Zia Environmental Excellence Program or, as the U.S. Postal Service requires, have the Procurement Department request a copy of a formal pollution prevention plan from every supplier, including consultants or outside contractors. The company can encourage customer feedback on product performance and level of

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"greenness". As well, the company can support customers by participating in the customer's own environmental improvement efforts.

Other partnerships include working with regulatory oversight agencies to develop strategies to improve environmental performance in a win/win scenario. This may include communicating improvement goals clearly with regulators and requesting input into ways to improve operations. It may include participation into regulation development and initiatives such as the Trust and Partnering group that intends to facilitate better understanding between regulators and regulated community. Other initiatives might include Project XL, Climate Wise, Sustainable Albuquerque, or the Pollution Prevention in Permitting Project and many more.

Other partnerships include working with a variety of organizations: community, business, educational, financial or economic development, local government and environmental to encourage broader environmental responsibility and company and community learning. This is especially relevant to sustainable development goals that will be met at the community level.

Continuous Improvement and Learning

Environmental excellence is achieved through continuous improvement and organizational learning. Continuous improvement is achieved when a company develops a "habit for improvement" and establishes a system that supports continuous improvement. The system uses the knowledge of people for problem-solving, uses quantitative measures for decision-making, and applies continuous improvement to all processes.

The company clearly recognizes that employees and partners are an invaluable source of improvement ideas. The company provides thinking tools, teaches employees to use those tools and provides an environment that supports improvement actions. Organizational learning is critical to a continuous improvement program.

Continuous improvement means that the company establishes measurable goals for environmental performance in an action plan and that a mechanism is in place to assure that no back sliding occurs in areas where improvements have been put into place. Continuous improvement should be reflected through specific results that are routinely measured, monitored and reported throughout the organization. Benchmarking is used to find creative solutions, as is thinking "outside the box".

Continuous improvement is ultimately applied to all company processes. Continuous improvement recognizes that breakthroughs are few and far

between, so incremental improvements must be encouraged in all company processes. The long-term vision is zero defects or zero wastes. This can be achieved through continuous improvement over time.

Environmental excellence is achieved through continuous improvement and organizational and community learning. A system must assure that process decisions are made on good data provided from a comprehensive data collection system tied to customer or environmental performance requirements. Process analysis through process maps and activity-based costing provide a system to measure, identify and report on improvements.

Continuous improvement means that all employees are aware of the company's environmental excellence goals and are encouraged to participate in quality improvement teams. These teams draw across the organization from management to line workers to challenge assumptions, think creatively and pilot new ideas.

Management recognizes that continuous improvement through incremental change leads a company towards excellence, as well as through big changes.

Continuous improvement means that the company establishes measurable goals for environmental performance in an action plan. It also means a mechanism is in place to assure that no back sliding occurs in areas where improvements have been put into place. Continuous improvement should be reflected through specific results that are routinely measured, monitored and reported throughout the organization. Improvement decisions consider all the potential risks and impacts of an improvement to assure that risks are not simply transferred to another area or environmental medium. Improvements may be measured using data relating to raw material use, waste generation, compliance with environmental, environmental indicators, health and safety regulations, product performance, defects, competitive comparisons, cost (including raw material, disposal, compliance, waste management, defective product returns) and financial performance.

Organizational and community learning are achieved through alignment of resources to goals and active communication of environmental excellence activities and results. The company has a system in place that includes active employee input and also recognizes employee development and training needs for growth and development and meets those needs with appropriate resources. As well, the company has a communication system in place that includes active listening and information sharing. Employee suggestion boxes are encouraged to receive other ideas, in addition to the employee input that is part of the process analysis and improvement system.

Community learning is also facilitated by active information sharing and listening. Community input may be a source for improvement ideas. As well,

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active communication to the community will help neighbors understand the company, its goals and operations better.

Green Zia Criteria Questions

Applicants must address these criteria in preparing their Green Zia Environmental Excellence Program applications. The questions that must be answered are dependent on the level to which your company is applying.

Green Zia Award Criteria

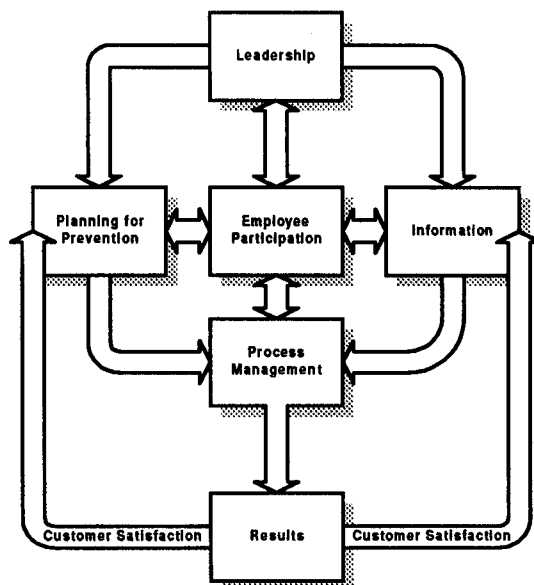
The criteria are organized into seven categories necessary for a prevention-based environmental management system, including:

- Leadership
- Planning for Prevention
- Customer Satisfaction
- Information Management
- Employee Participation
- Process Management
- Results

Each of the seven categories addresses key elements of a systematic pollution prevention program. It is important to understand that all the categories are linked in a system, for example leadership sets the vision for prevention, which is incorporated into strategic planning. Action plans are developed as part of strategic planning which involves employee training or participation. Process management requires employee, customer or supplier input and process improvements may require capital budgeting. Information management such as activity-based costing is linked to process analysis and strategic planning. Results can be measured from all categories to measure the success of the system. Core values and criteria are revised each year meaning that the program itself can benefit from continuous improvement.

The systems approach emphasizes the relationships and interdependence of the Criteria, as illustrated below.

GREEN ZIA CRITERIA FOR ENVIRONMENTAL EXCELLENCE A Systems Perspective



Preparing an application

Applicants can apply at three different levels:

- Commitment Level
- Achievement Level
- Green Zia Environmental Excellence Award

The application criteria are organized into three levels that correspond to the recognition or award levels. The first level is the Category level (=Commitment level), the second is the Item level (=Achievement level) and the third is the Area level (=Green Zia Environmental Excellence Award).

Commitment level

At the Commitment level, a company is starting to develop a prevention-based environmental management *system*. A company may have no experience with pollution prevention but is in the first stages of putting a systematic pollution prevention system in place. As well, a company at this level may

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have some pollution prevention successes but they have not been achieved systematically.

Companies applying at the Commitment level addresses the paragraph under the Category level and addresses Categories 1-6. At this level, no results are expected because the environmental management system is under development, therefore Category 7: Results does not apply.

A company that wishes to receive the Commitment level recognition can achieve this level fairly easily by using the Green Zia tools in their company. Other systems may also qualify a company for this level of recognition.

Achievement Level

A company that has received the "Achievement" level recognition has shown progress in the development and expansion of its prevention-based environmental management system and can demonstrate some measurable results.

At the Achievement level, a company addresses Categories 1-7 through the "Item" level.

Green Zia Environmental Excellence Award

A company that receives the Green Zia Environmental Excellence Award has a fully developed prevention-based environmental management systems and has integrated pollution prevention and environmental excellence into core business practices. The company can demonstrate significant results in environmental improvement, cost savings, employee satisfaction, community involvement and improved compliance.

At the Green Zia Environmental Excellence Award level, a company must address Categories 1-7 through the "Area" level.

Category 6. Process Management	
Green Zia Environmental Excellence Award	Commitment level <i>This section examines how the company systematically evaluates its processes to identify efficiency and improvement opportunities and environmental, health and safety requirements.</i>
	Achievement level Item 6.1 Process Analysis Describe how the company analyzes its key processes and subprocesses to identify environment, health and safety requirements and areas for improvement.
	<p>In your response, please address the following Areas:</p> <ul style="list-style-type: none">(a) Summarize how the company institutionalizes process analysis and improvement so that those activities become a part of daily operations.(b) Summarize how the company systematically links the environment, health and safety management system and day to day operations?(c) Summarize how the company involves customers and suppliers in process analysis.

Category 1. Leadership

This section examines how management vision and commitment to pollution prevention and environmental excellence is communicated to employees and how the vision is translated into action plans. This section also examines how the company provides leadership to support pollution prevention and environmental excellence in the community.

Item 1.1 Leadership System

Describe how the company's vision and commitment to pollution prevention and environmental excellence is demonstrated to employees, suppliers and oversight agencies through management involvement, action plans, alignment of resources and performance measures.

In this section, please address the following areas:

- (a) Summarize how management demonstrates commitment to environmental excellence on par with other major company goals through policy statements, incorporating and integrating prevention into other programs and other activities.
- (b) Summarize how management encourages proactive communication with regulatory agencies, employees, customers, lenders, suppliers and investors to improve environmental performance, gain support for pollution prevention and communicate prevention successes.
- (c) Summarize how management provides support for environmental excellence at all levels of the company and how it integrates pollution prevention into core business practices.
- (d) Summarize how management assures that pollution prevention is incorporated into action plans and performance measures and how results are tracked throughout the company.

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Item 1.2 Community Leadership and Responsibility

Describe how the company supports environmental excellence and pollution prevention in the community and how it communicates its environmental excellence goals and performance to the community.

In this section, please address the following areas:

- (a) Summarize how the company supports community-based environmental protection and sustainability activities in the community and, if such activity is not occurring in a community, how the company encourages the establishment of such programs through civic groups or other business activities.
- (b) Summarize how the company addresses environmental justice issues and overall understanding of existing environmental problems or circumstances specific to the community.
- (c) Summarize how the company participates in community redevelopment (through programs like Brownfields) and local economic development through environmental excellence and community enhancement.
- (d) Summarize how the company supports mentoring of other businesses in the community to promote prevention and excellence.
- (e) Summarize how the company supports activities that support affirmative procurement goals such as buying products or raw materials that were formally wastes and other related businesses such as industrial ecology, value-added reuse of materials and recycling.
- (f) Summarize how the company communicates with the community and other stakeholders on environmental performance through annual reports, web pages, and other means.

Category 2. Planning for Prevention and Excellence

This section examines how pollution prevention and environmental health and safety improvement goals are systematically integrated into the company's planning process, including process analysis, activity-based costing, problem solving and decision-making resulting in an action plan. This section also examines how the plan is depolyed.

Item 2.1 Planning for Pollution Prevention and Environmental Health and Safety Improvements

Describe how the company sets strategic direction for pollution prevention and environmental excellence.

In this section, please address these areas:

- (a) Summarize how the company uses information from the prevention-based environmental management system in other planning initiatives such as capital budgeting, procurement strategies, strategic planning, marketing and sales management, accounting, productivity improvement and other top management initiatives.
- (b) Summarize how employees are included in the planning process.
- (c) Summarize how vendors are involved in planning, including two-way relationships with vendors for inventory control, just in time manufacturing, use of safe materials and other areas.
- (d) Summarize how the company factors in the long-term environmental impact of your business on environmental sustainability and how the company considers environmental sustainability in the design of products or processes over time (The Natural Step, the Six E's, Six sigma, Factor Four, etc).
- (e) Summarize how the company anticipates and mediates external impacts?

Item 2.2 Plan Implementation

Describe how the company's plan for pollution prevention and environmental excellence is implemented.

In your response , please address the following areas:

- (a) Summarize how action plans are carried out.
- (b) Summarize how the action plans are documented and tracked for success.
- (c) Summarize how action plans are modified to address continuous quality improvement.
- (d) Summarize how action plans are communicated to the employees, stakeholders and the community.
- (e) Summarize how the prevention-based environmental management system is formally maintained
- (f) Summarize how the prevention-based environmental management system is audited by either internal or external auditors.

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- (g) Summarize how results of the program (both success and failures) are reported back to the company to assure organizational learning and how this information is used to improve the program and select items for action plans for the coming year.
- (h) Summarize how resources are aligned to support environmental excellence and pollution prevention efforts.
- (f) Summarize how the company partners with suppliers to improve the suppliers' environment, safety and health performance.

Category 3. Customer and Market Focus

This section examines how the company involves customers and suppliers in the development and marketing of the company's environmental excellence program. This section also examines how the company communicates and improves interactions with oversight agencies as it improves its overall environmental performance.

Item 3.1 Customer Focus

Describe how the company communicates its efforts to improve the environmental performance of a product, process or service to its customers. Also describe how the company involves its customers and seeks customer feedback to improve performance and quality standards of products, production processes and services within the context of environmental excellence.

In this section please address the following areas:

- (a) Summarize how the company solicits customer feedback for improvement in product or service quality and performance standards and incorporates that feedback into the planning process in a systematic fashion.
- (b) Summarize how suppliers and vendors are involved in product development and process improvements to improve the environmental, health and safety performance of a product, process or service.
- (c) Summarize how the company evaluates suppliers and vendors for their environment, health and safety performance.
- (d) Summarize how your company encourages or requires all suppliers, including outside consultants, contractors and vendors to have pollution prevention plans in place.
- (e) Summarize how the company communicates with customers regarding environmental performance and attempts to improve performance to date.
- (f) Summarize how the company works with customers to exercise proper product stewardship by informing them of proper stewardship, partnering with them to encourage proper stewardship and working with them to

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assess the life cycle of the materials (including yours) that are in their products.

- (g) Summarize how the company supports or participates in customers' waste reduction or environmental improvement efforts.

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Item 3.2 Market Focus

Describe how the company considers the environmental, health and safety performance of operations, production processes and products as part of marketing as an environmentally responsible company. Also describe how the company identifies new markets for "green" products and secondary markets for waste materials.

In this section please address the following areas:

- (a) Summarize how competitor analysis on green trends is tracked and considered in product design.
- (b) Summarize how the company evaluates competitors and market trends in the formulation of your environment, health and safety strategies.
- (c) Summarize how the company markets its green products, processes or services (through advertisements, web pages, etc.) and how it tracks competitors green marketing strategies.
- (d) Summarize how the company develops new markets by converting wastes to products through onsite product development; working with other companies that convert waste to useful products; participating in feasibility studies; or by working with universities to enter into collaborative research projects to find ways to make product from waste.

Item 3.3 Stakeholder Focus

Describe how your company identifies and works with key stakeholders to improve overall environmental, health and safety performance.

In this section please address the following areas:

- (a) Summarize how the company works with environment, health and safety oversight agencies to manage compliance in a win/win fashion.
- (b) Summarize how the company communicates prevention and excellence goals and action plans to stakeholders to gain feedback, support and buy-in.
- (c) Summarize how the company develops systems for timely reporting of monitoring results, spills or other reportable activities to appropriate stakeholders to minimize environmental harm.
- (d) Summarize how the company works with oversight agencies and other stakeholders to develop regulations and compliance approaches to improve overall environmental results and to incorporate prevention-first philosophies. (Trust and Partnering, Project XL, P4 projects).
- (e) Summarize how the company provides an annual third party, independent certification of success made in the pollution prevention program and how results are communicated to stakeholders.
- (f) Summarize how the company considers corrective actions or problem areas to prioritize prevention opportunities.

4. Information Analysis

This section examines how the company uses information to assess service, product or process performance and areas for improvement based on cost, risk reduction, productivity and/or environmental, health and safety considerations.

Item 4.1 Business Analysis

Describe how the company uses information to understand the environmental, health and safety requirements associated with the production of a product or service and also how the company uses financial information to assess the full cost associated with a product or a production process.

In this section, please address the following areas:

- (a) Summarize how the company determines the environment, health and safety requirements associated with a product or a production process.
- (b) Summarize how the company uses full cost accounting or activity-based accounting to understand the true cost of a product or production process.
- (c) Summarize how the company assesses raw material input, material flow and non-product outputs from a product or production process.
- (d) Summarize how the company measures the environmental impact of a product or production process through the life of the product.

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Item 4.2 Comparative Analysis

Describe how the company uses information or benchmarking to improve services, processes or product design based on environmental, health and safety performance.

In this section, please address the following areas:

- (a) Summarize how the company uses comparative information to assess product design or production process for environment impact considerations (i.e. "green products", life cycle analysis).
- (b) Summarize how the company uses comparative information to gain knowledge of best management practices or benchmarking to improve product design or to improve production processes considering environmental, health and safety issues.

Item 4.3 Decision-Based Analysis

Describe how the company uses information to make decisions on services, product design and process improvements in terms of environmental, health and safety considerations.

In this section, please address the following areas:

- (a) Summarize how the company uses information such as cost, return on investment, risk reduction or corrective actions to prioritize areas for improvement.
- (b) Summarize how the company uses information to measure results (volume reduction, toxicity reduction, productivity improvements, risk reduction, reduced liability, cost savings) in terms of environment, health or safety.

5. Human Resources Focus

This section examines how employee input is included in pollution prevention planning and implementation. This section also examines how employee value and well being is considered in developing pollution prevention and environmental health and safety goals and action plans.

Item 5.1 Employee Education, Awareness and Skill Development

Describe how employees are trained to increase environmental and health and safety awareness, to instill organizational values concerning prevention and improvement and to provide skills to develop and implement prevention and improvement goals.

In this section, please address the following areas:

- (a) Summarize how the company's employee training program affects employee input to improve environmental health and safety results?
- (b) Summarize how employees' training needs (awareness and specific skill development, knowledge of regulations) are determined and aligned to the ongoing pollution prevention program?

Item 5.2 Employee Involvement for Continuous Improvement

Describe how employee input is included in process analysis, problem-solving, decision-making and overall development and implementation of pollution prevention action plans.

In this section, please address the following areas:

- (a) Summarize how employees are involved in service, product and process design for environmental excellence.
- (b) Summarize how the company provides facilitation and other support to assure broad employee involvement in pollution prevention efforts.
- (c) Summarize how employees are informed of action plans and how human resources are aligned to implement action plans.
- (d) Summarize how employees are motivated to pursue prevention and excellence opportunities (awareness programs, monetary incentives, rewards, tied to bonuses).
- (e) Summarize how the company ensures that the workplace encourages employee empowerment for prevention and excellence.
- (f) Summarize how the company ensures that employees are up to date in the company's successes relative to prevention and excellence goals.

Category 6. Process Management

This section examines how the company systematically evaluates its processes to identify efficiency and improvement opportunities and environmental, health and safety requirements.

Item 6.1 Process Analysis

Describe how the company analyzes its key processes and subprocesses to identify environment, health and safety requirements and areas for improvement.

In this section, please address the following Areas:

- (a) Summarize how the company institutionalizes process analysis and improvement so that those activities become a part of daily operations.
- (b) Summarize how the company systematically links the environment, health and safety management system and day to day operations?
- (c) Summarize how the company involves customers and suppliers in process analysis.

Item 6.2 Process Improvement

Describe how results and tactical plans contribute to the process improvement activities.

In this section, please address the following areas:

- (a) Summarize how the company systematically prioritizes areas for continuous improvements of key processes and subprocesses.
- (b) Summarize how the company involves customers and suppliers to identify and implement process improvements.
- (c) Summarize how the company uses benchmarking as part of ongoing process improvement activities.

Item 6.3 Managing Processes to Achieve Environmental Health and Safety Goals

Describe how your company systematically links environmental, health and safety requirements and improvement goals to specific production processes.

In this section, please address the following areas:

- (a) Summarize how the company systematically assesses the environment, health and safety requirements to key processes and subprocesses?
- (b) Summarize how the company systematically identifies areas for improvement for environment, health and safety issues?

Category 7. Results

The Results category examines a company's performance in key areas: environment, health and safety; customer and stakeholder involvement; process management; financial and marketplace; employee involvement and satisfaction; and community.

7.1 Company-specific Results

Summarize the company-specific results that relate to the company's performance goals, including process management and employee involvement and satisfaction.

In your response, please address the following Areas:

- (a) Summarize current levels and trends in use of materials.
- (b) Summarize current levels and trends in waste generation.
- (c) Summarize current levels and trends in productivity.
- (d) Summarize current levels and trends in efficiency.
- (e) Summarize current levels and trends in employee satisfaction, skill development and involvement in environmental excellence efforts.

7.2 Environmental, Health and Safety Results

Summarize the company's environmental, health and safety results, including compliance, regulatory requirements and worker health and safety.

In your response, please address the following Areas:

- (a) Summarize current levels and trends including compliance rates, regulatory requirements, and workplace safety.
- (b) Summarize current levels and trends including environmental, safety and health impact of our processes, products or services.
- (c) Summarize current levels and trends of supplier and partner environmental, health and safety performance resulting from the company's environmental excellence efforts.
- (d) Summarize current levels and trends of environmental and economic performance in the surrounding community resulting from the company's environmental excellence outreach.

7.3 Customer Satisfaction Results

Summarize customer and stakeholder satisfaction and dissatisfaction results within the context of the environmental excellence program.

In your response, please address the following Areas:

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- (a) Summarize current levels and trends in customer satisfaction or dissatisfaction in the performance and quality of company 's service, products or production processes.
- (b) Summarize current trends and results in stakeholder involvement.
- (c) Summarize current trends and results in oversight agency involvement.

7.4 Financial and Market Results

Summarize the company's financial and marketplace performance results including costs.

In your response, please address the following Areas:

- (a) Summarize current levels and trends in financial performance related to environmental excellence efforts.
- (b) Summarize current levels and trends in market expansion or new market development for green products or waste-to-product activities.

(d) Supplier and Partner Results

- (a) What is the environment, safety and health impact of the process to produce our product
- (b) How many resources have you not consumed by improving your processes?
- (c) Through reduced regulatory oversight due to process improvement, how do you benefit? (stakeholders, regulators, economically)
- (d) How much safer do your employees perceive their work space/place to be?
- (e)
- (f)

(e)

- (g)
- (h) What are the results of our operation within the community?
- (i) What is the economic benefit of our product to the company?
- (j) What is the economic benefit of process improvements to our company?
- (k) What is the economic benefit to the community?
- (l) What other results have you achieved through this process improvement? (productivity improvements)