DOE/NN-0004

Department of Energy
Office of Emergency Management

Hazardous Materials (HAZMAT) Spill Center

Strategic Plan

January 1996

Acknowledgements

Appreciation is expressed to those individuals from both the private and government sectors who gave their time and effort in providing valuable information for the development of this strategic plan.

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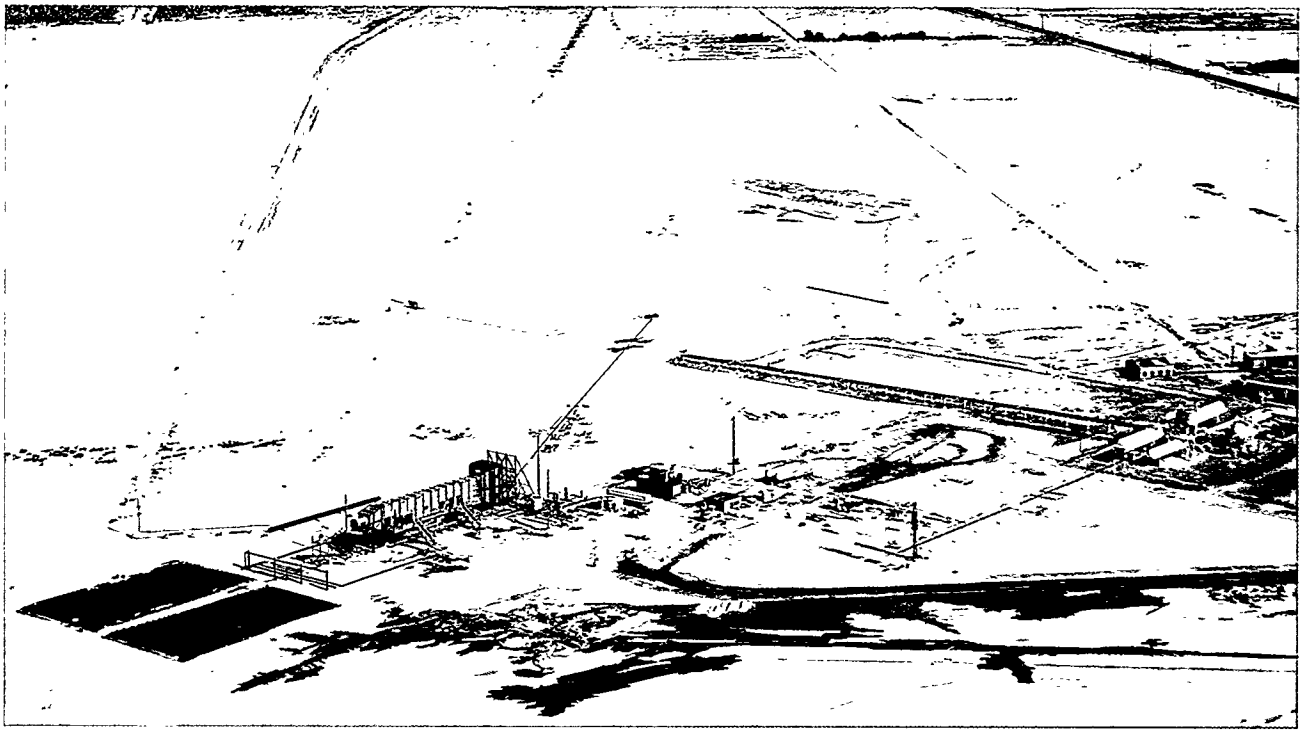
HAZMAT SPILL CENTER STRATEGIC PLAN

BACKGROUND

This strategic plan was developed in keeping with the Department of Energy's mission for partnership with its customers to contribute to our Nation's welfare by providing the technical information and the scientific and educational foundation for the technology, policy and institutional leadership necessary to achieve efficiency in energy use, diversity in energy sources, a more productive and competitive economy, improved environmental quality, and a secure national defense. The Plan provides the concepts for realigning the Departments's Hazardous Materials Spill Center (HSC) in achieving its vision of becoming the global leader in meeting the diverse HAZMAT needs in the areas of testing, training, and technology. Each of these areas encompass many facets and a multitude of functional and operational requirements at the Federal, state, tribal, and local government levels, as well as those of foreign governments and the private sector.

The evolution of the limited dimensional Liquefied Gaseous Fuels Spill Test Facility into a multifaceted HAZMAT Spill Center will require us to totally redefine our way of thinking as related to our business approach, both within and outside of the Department. We need to establish and maintain a viable and vibrant outreach program through all aspects of the public (via government agencies) and private sectors, to include foreign partnerships.

The HAZMAT Spill Center goals and objectives provide the direction for meeting our vision. This direction takes into consideration the trends and happenings identified in the "Strategic Outlook", which includes valuable input from our stakeholders and our present and future customers. It is our worldwide customers that provide the essence of the strategic outlook for the HAZMAT Spill Center.



Hazardous Materials (HAZMAT) Spill Center, Nevada Test Site.

Establish, manage, operate and maintain a world class HAZMAT SPILL CENTER, which will incorporate: (1) customer-focused alliances with the DOE family that integrates the Center activities with critical business functions; (2) a research and demonstration facility provided on a user-fee basis to test sponsors, both foreign and domestic, concerned with safety aspects of hazardous materials; (3) a location for releases of live materials under controlled conditions to determine the patterns of dispersion, mitigation techniques, effluent analysis, and combustion characteristics; (4) a framework for relationships between industry and governments for joint participation; (5) a unique opportunity for training emergency responders in addressing all consequences, to include mitigation, clean-up, environmental remediation, etc., resulting from a release of hazardous materials to the environment; and (6) a cadre of experts that meet the expectations of a global customer base.

STRATEGIC OUTLOOK

The genesis of the DOE HAZMAT Spill Center started in the mid 1980's to address the safety and environmental hazards of transporting massive quantities of liquefied gaseous fuels from foreign sources to the United States. The Liquefied Gaseous Fuels Spill Test Facility (LGFSTF) remains a major and important component of the HAZMAT Spill Center. The Center is now a unique multi-purpose facility necessary for the expanded special needs of its customer demands. There are five functional areas to service strategic markets.

DOE HAZMAT Spill Center
Capability and Application Summary

Remote Sensing

Applications:

Effluent analysis
Stand-off HAZMAT identification

Source Term Definition - Dispersion Modeling

Applications:

Test and validate computer modeling for source term definition and dispersion of HAZMAT
Enhance and improve existing computer models for source term definition and dispersion of HAZMAT
Develop new computer models for the dispersion of HAZMAT

Mitigation Technology

Applications:

Test mitigation techniques using live material
Test and validate computer mitigation models
Conduct research for new techniques

HAZMAT Training

Applications:

Train the trainers or leaders
Gain confidence in equipment and procedures by using live material

Live HAZMAT Material Testing

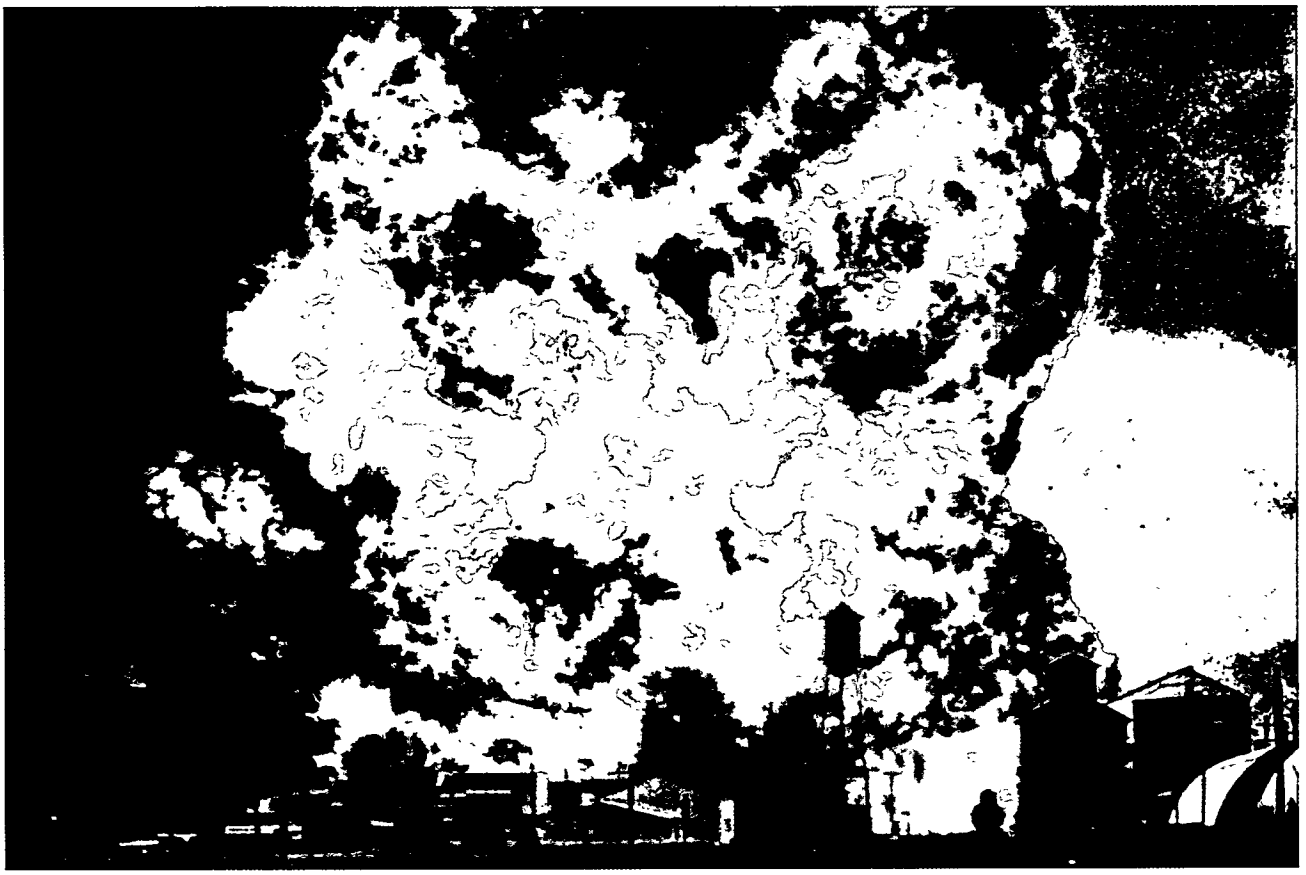
Applications:

Test protective gear using instrumented mannequins
Test HAZMAT instrumentation
Test equipment and procedures

The DOE respects the environment and vows to be a leader in improving the quality of the environment of future generations. Even after an aggressive effort to remove excess and unneeded chemicals, DOE continues to receive, store, consume and dispose of large quantities of hazardous materials. DOE places high value on providing the protective gear, equipment and procedures for the personnel who must respond to HAZMAT accidents.

DOE plays a significant role in the non-proliferation of weapons of mass destruction, especially nuclear weapons. Detection of nuclear weapon proliferation uses stand-off analysis of effluent as one indicator of development activity. The DOE HAZMAT Spill Center provides a wind tunnel that can "spill" known quantities of effluent, under controlled conditions, into the atmosphere at known rates. This capability provides a unique facility to test and/or validate the results of the sensors used in effluent analysis.

While operation of the Center is crucial to DOE's mission, DOE currently does not fully utilize the facility. It is prudent and economical to offer, on a cost reimbursable basis, the unique capabilities of the Center to other government agencies (including foreign), state, tribal agencies, and the private sector. One criterion for use by this customer base is that the activity must contribute to the preservation of the environment, safety of personnel and/or national security - which is consistent with the DOE core values.



Accidental release of Liquefied Petroleum Gas, Mexico City.

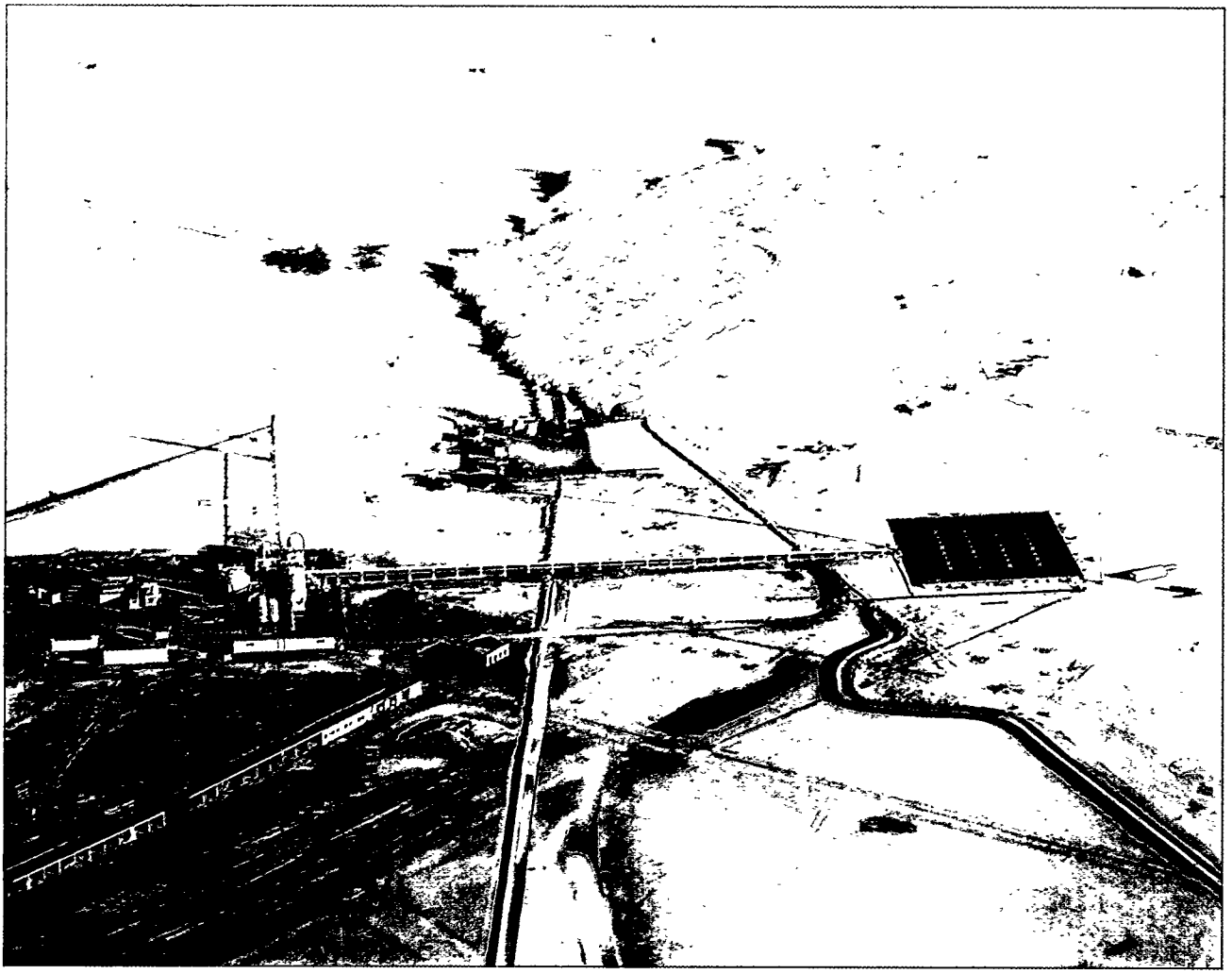
A broader perspective of the value of the DOE HAZMAT Spill Center is based on the assumption that the probability of an accident is proportional to the ton-miles of hazardous materials being moved and used. Department of Transportation data show that there are in excess of 100 billion ton-miles of hazardous materials transported over the United States highways each year. This figure does not include any movements by rail, water, air, or unreported movements.

Although sometimes not thought of as being hazardous materials, the ton-miles of petroleum products being transported are potentially hazardous to the environment. As developing nations place a greater demand on the petroleum logistical system the probability of spill accidents increases. The HAZMAT Spill Center should be a leader in developing and providing training and procedures for assisting in mitigation and clean-up of spills for these developing nations. As history teaches us, a significant spill anywhere in the world can affect the global environment.

Be the global leader in meeting the diverse HAZMAT needs of federal, state, tribal and local governments, foreign governments and the private sector by providing a unique center that is cost-effective, flexible and customer oriented.

PLANNING ASSUMPTIONS

- Base funding will be provided for implementation of the concepts outlined in this plan.
- Over the next ten-years there will continue to be an internal need regarding HAZMAT testing, training, and technologies.
- The number of facilities with live material spill capability will be a limiting factor as the worldwide demand for testing increases.
- Major oil spills will increase because of the continued increased use world-wide of oil and oil related products.
- There will be adequate HAZMAT Spill Center staff available to implement this plan.
- This plan will remain dynamic and its vision will be re-engineered to adapt to the emerging, challenging, and changing needs of the HAZMAT Community.



AMOCO Hydrogen Fluoride dispersion experiment.

STRATEGIC GOALS AND OBJECTIVES

DOE HAZMAT SPILL CENTER
Strategic Goals

Goal 1: DOE-Wide Partnerships

We will form customer-focused alliances with the DOE family to integrate HAZMAT Spill Center initiatives into critical business functions.

Goal 2: Government and Private Partnerships

We will leverage our unique resources to achieve significant, long term and diverse partnerships with government and private sectors.

Goal 3: Proactive Marketing Approach

We will understand the customers missions so that the capabilities of the HAZMAT Spill Center will be timely and responsive to market analyses.

Goal 4: Fully Utilized Center

Using the results of the market analyses, we will aggressively pursue potential customers for year-round use of the Center.

Goal 5: State of the Art Center

We will exploit technical and scientific expertise found within DOE, other agencies, academia, and industry to provide instrumentation, diagnostics, and computing power.

Goal 6: World-Recognized Training & Technical Capabilities

We will enhance existing training capabilities and expand our cadre of technical experts in order to meet the growing and diverse needs of our customers.

Goal 1:
DOE-WIDE PARTNERSHIPS

We will form customer-focused alliances with the DOE family to integrate HAZMAT Spill Center initiatives into critical business functions.

STRATEGIES

Develop a Strategic Plan with input from stakeholders

Performance Measures

Amount of stakeholder involvement
Comprehensiveness of stakeholder involvement
Plan developed on time
Plan widely distributed

Gain customer buy-in on HAZMAT Spill Center goals and objectives

Performance Measures

Positive customer feed-back
Customer comments resulting in change
Customer involvement in attaining goals

Integrate objectives into Department plans and budgets

Performance Measures

NN-60 funding committed to HSC
Funding committed by other DOE offices
Funding identified in out-year budgets
HSC activities identified in out-year plans

Provide leadership and coordination for HAZMAT Spill Center utilization

Performance Measures

Take lead to conduct semi-annual HSC capabilities briefings to DOE partners
Conduct annual coordination meeting with Hazardous Materials Management and Emergency Response (HAMMER) facility

Goal 2:
GOVERNMENT AND PRIVATE PARTNERSHIPS

We will leverage our unique resources to achieve significant, long term and diverse partnerships with government and private sectors.

STRATEGIES

Increase the participation of government and private sector customers

Performance Measures

Invitations to participate
Responses to the invitations
Amount of follow-up for non-participants

Position DOE resources to be a key contributor for resolving HAZMAT problems

Performance Measures

Government HAZMAT problems solved primarily by DOE HAZMAT Spill Center
Industry HAZMAT problems solved primarily by DOE HAZMAT Spill Center

Train our people on the process of developing partnerships

Performance Measures

Training opportunities available to the Center Team
Training opportunities attended by the Center Team

Provide current and strategic data for decision makers of our partners

Performance Measures

Partnership awareness of available data
Number of requests for data from partners
Data provided by the Center

Goal 3:
PROACTIVE MARKETING APPROACH

We will understand the customers missions so that the capabilities of the HAZMAT Spill Center will be timely and responsive to market analyses.

STRATEGIES

Gain insight into industry strategic plans pertaining to HAZMAT safety and health

Performance Measures

Planning objectives requested
Planning objectives discussed

Obtain government strategic plans pertaining to HAZMAT safety and health

Performance Measures

Planning objectives requested
Planning objectives discussed

Use partnerships to generate new concepts for the HAZMAT Spill Center

Performance Measures

Sessions held with DOE partners
New concepts identified by DOE partners
New concepts implemented by HAZMAT Spill Center customers

Develop customer dialogue plans that focus on data for market analyses

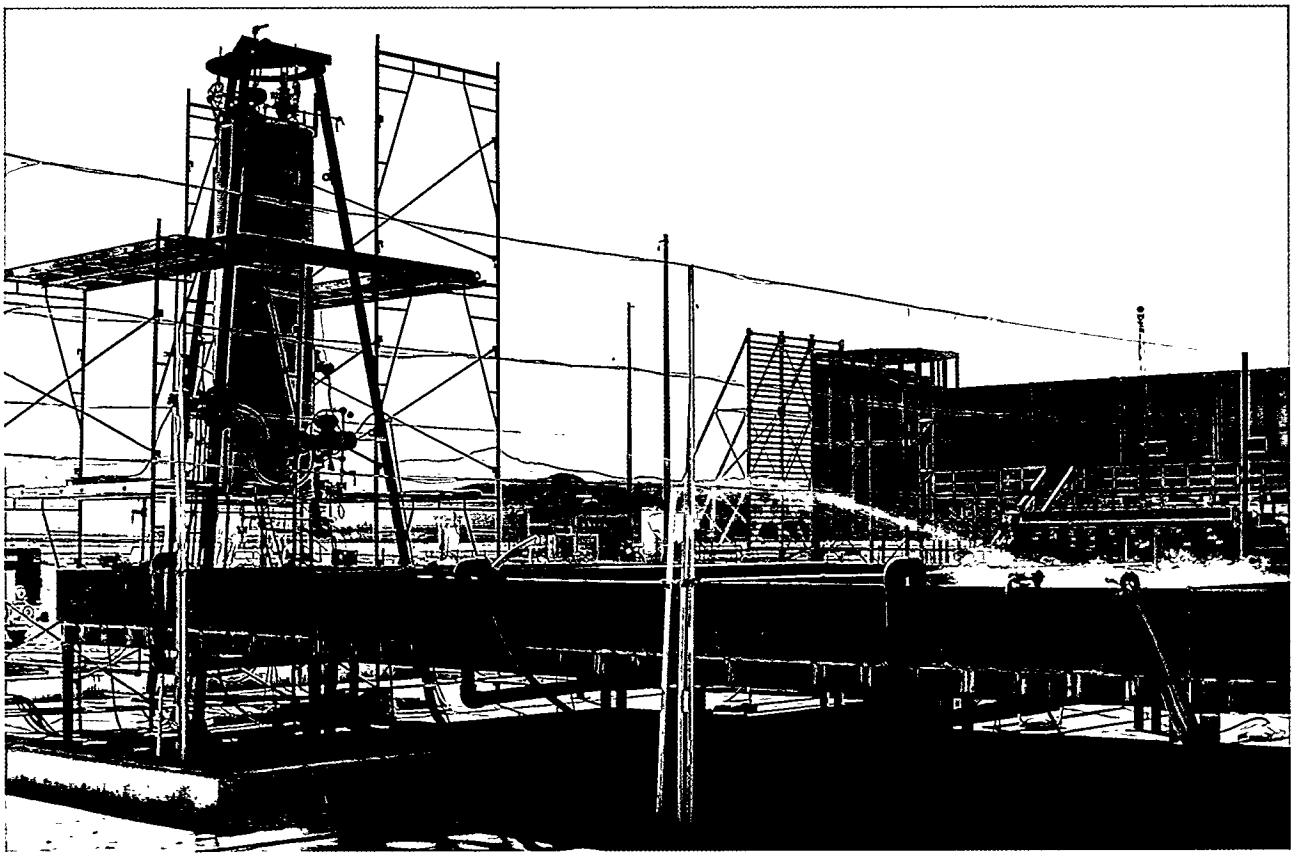
Performance Measures

Dialogue plans developed
Customer interviews completed
Trends identified from interviews

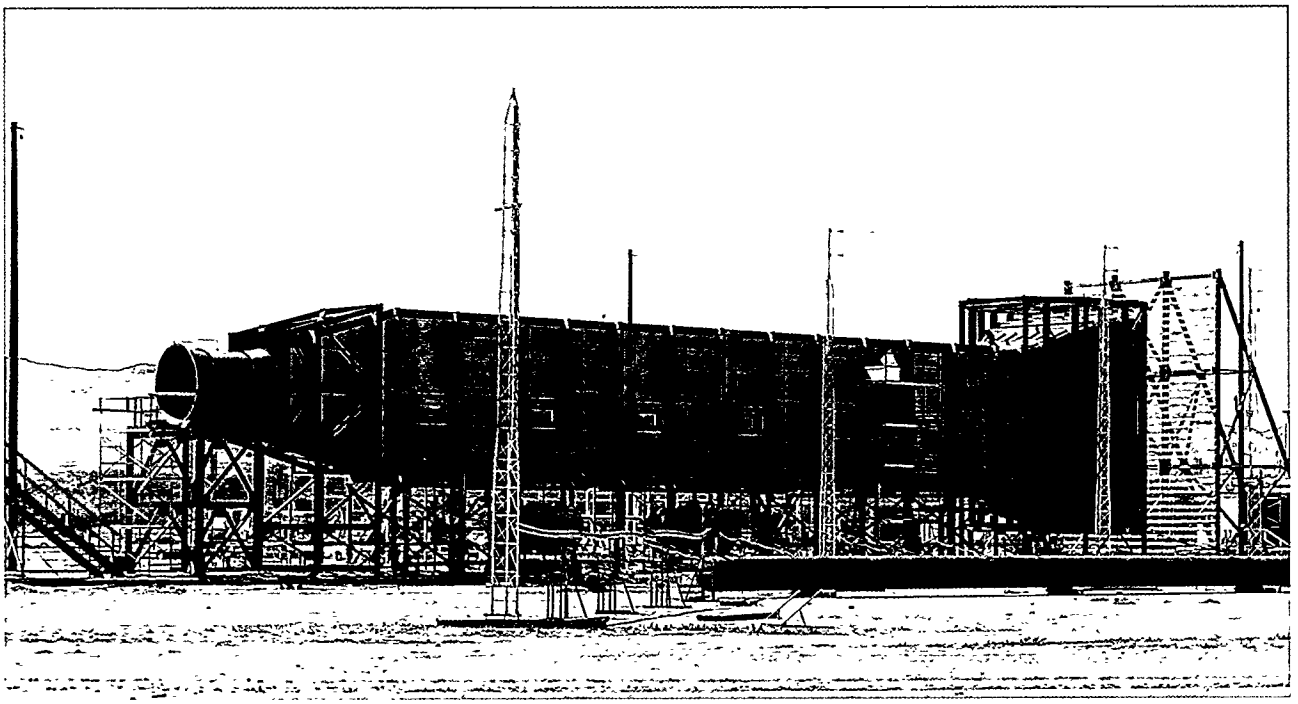
Use DOE's Senior Industrial Advisors to explore potential market areas

Performance Measures

Senior Industrial Advisors canvassed
Concepts identified by DOE Senior Industrial Advisors
New uses selected as a result of input from the DOE Senior Industrial Advisors
New uses implemented as a result of input from DOE Senior Industrial Advisors



Center for Chemical Process Safety/Department of Energy - Partnering.



HSC induced draft wind tunnel.

Goal 4:
FULLY UTILIZED CENTER

Using the results of market analyses, we will aggressively pursue potential customers for year-round use of the facility.

STRATEGIES

Train HSC Team on selling and closing agreements

Performance Measures

Training opportunities available to the Center Team
Training opportunities attended by the Center Team

Use Senior Industry Officials to identify potential customers

Performance Measures

Strategic outlook expanded outside the DOE community
Strategic outlook includes the international community
Annual follow-up with initial contact list

Develop effective broad coverage advertising plans

Performance Measures

Timely newsletter for stakeholders and customers
Brochures detailing capabilities of the Center
Professional associations briefed
Professional conferences, including international, participated in or co-sponsored
Interactions at the international level

Develop quality criteria

Performance Measures

Standards and criteria established through lessons learned
Government and industry reviews/ seminars
Standards and criteria established through the use of critical feedback obtained from reviews/ seminars
Noncompulsory site constraints eliminated

Develop uses for the Center during the winter months

Performance Measures

Cold weather tests scheduled
HAZMAT cold weather training sessions scheduled

Goal 5:
STATE OF THE ART CENTER

We will exploit technical and scientific expertise found within DOE, other agencies, academia, and industry to provide instrumentation, diagnostics, and computing power.

STRATEGIES

Form partnerships with DOE scientific community to keep current on state of the art technologies

Performance Measures

Uses of DOE National Laboratories
Partnerships with DOE Offices
Seminars conducted for DOE Scientific Community

Present intellectual challenges to the scientific community for source term definition, dispersion, mitigation, and multi-component modeling

Performance Measures

Source term definition challenges developed and presented
Dispersion challenges developed and presented
Mitigation challenges developed and presented
Data files for multi-component modeling experiments/test

Emphasize full scale live material experiments to test or validate computer modeling

Performance Measures

Industry and government experiments or tests
Joint domestic and international experiments or tests

Deploy advanced training aids to include virtual reality capabilities

Performance Measures

Advanced computer technologies as training tools
Video and telecommunication links with the international community
Worldwide research of advanced training aids for HSC application

Exploit HSC results to the HAZMAT modeling community to promote update of models

Performance Measures

Atmospheric Release Advisory Capability (ARAC) technologies applied to HSC activities
Models tested and/or validated at HSC

Goal 6:

WORLD-RECOGNIZED TRAINING AND TECHNICAL CAPABILITIES

We will enhance the existing training capabilities and expand our cadre of technical experts in order to meet the growing and diverse needs of our customers.

STRATEGIES

Use proven technologies to provide for a World-Recognized training and technical center

Performance Measures

Worldwide facilities reviewed to adopt the best capabilities of each
Technologies identified
Technologies selected
Technologies implemented

Solicit acknowledged international experts to supplement HSC cadre

Performance Measures

Experts identified
Experts selected
Experts affiliated with the HAZMAT Spill Center

Utilize Nevada Operations Office assets to expand HAZMAT training capabilities

Performance Measures

Discussions with Nevada Operations Office Management
Additional capabilities and/or equipment supplied

Balance the use of the Spill Center to meet diverse customer needs

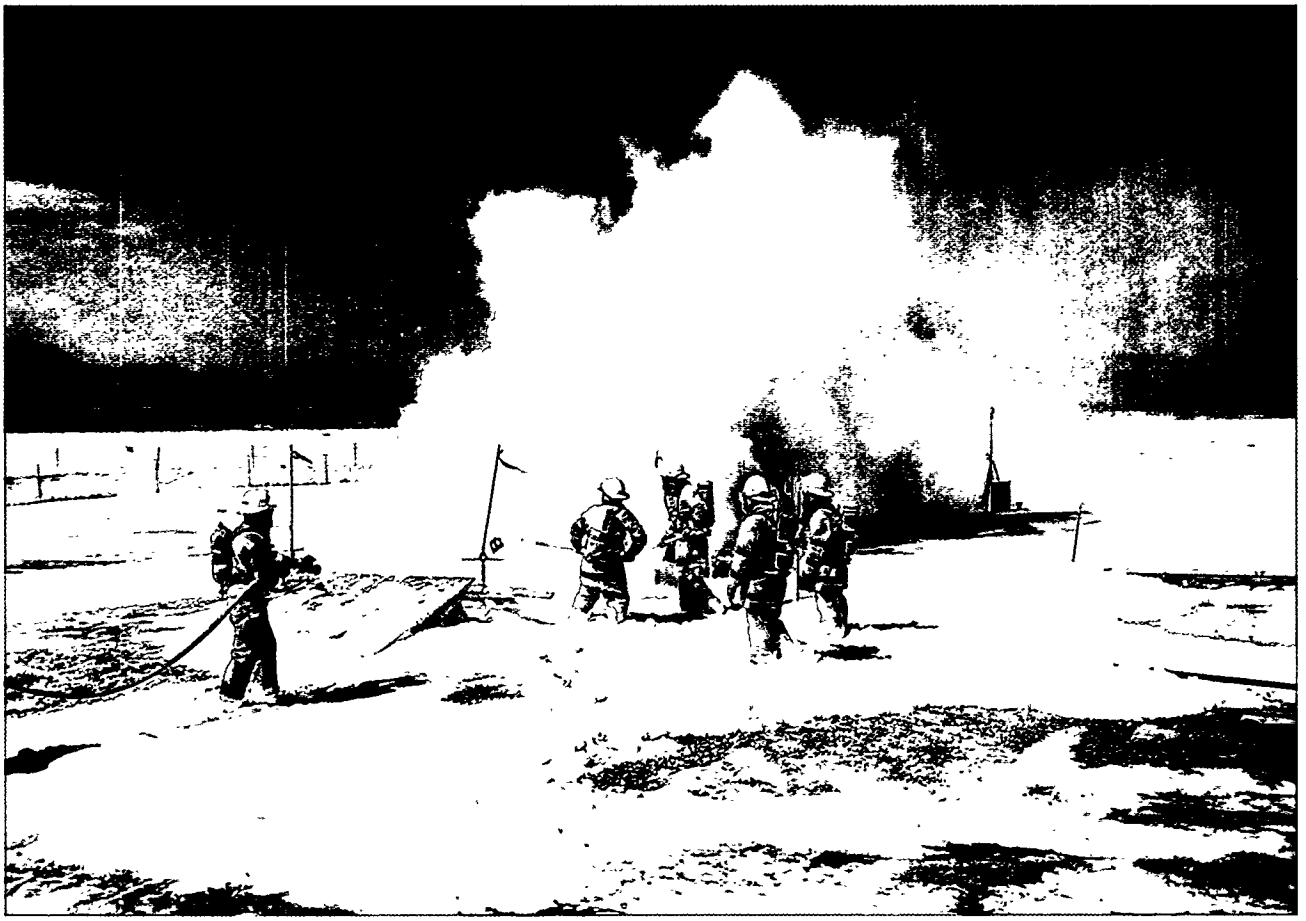
Performance Measures

Follow-up customer surveys conducted
Usage plan based on comprehensive "User Community" input

Obtain sufficient funding to create World-Recognized training capabilities

Performance Measures

Identify Pros and Cons for market analyses
Market analyses and diverse customer needs based briefings to justify budget request
DOE funding level sufficient to pursue World-Recognized capabilities



Training and technology evaluation.

STRATEGIC ISSUES

- Required resources and support to implement the "Vision" for a World-Class HAZMAT Spill Center
- Constrained funding throughout the Department - do more with less!
- The Department of Energy is currently undergoing realignment and many of its offices are unsure as to what their future HAZMAT requirements will be.
- Marketing future capabilities but offering current day technologies.
- Overcoming past reputation.

UPDATING - PROCESS AND TIMELINES

Vision, regarding future HAZMAT requirements as related to testing, training, and technologies, both internal and external to the Department of Energy, has been the driving force for the development of this Strategic Plan. Over any given period of time the basis for one's vision is susceptible to change, thus, the current concepts outlined in this plan must be reviewed and updated periodically to ensure the plan remains attuned with the ever changing sociopolitical and technological climates. The annual review and update of this plan will be tracked as a designated Action Task in the Department of Energy's, Office of Emergency Management's Annual Operating Plan. In addition to the annual internal review, a tri-annual review of the plan will be requested from HSC Customers. This review will provide an outside perspective that will enhance the effort to ensure the plan is in keeping with national needs. These reviews will provide the basis for the HAZMAT Spill Center's Program Plan and budget development, as well as a source of input for the Office of Emergency Management's Multi-Year Program Plan and the Annual Report to the Secretary on DOE Readiness Assurance.

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