

STREAM PRESERVATION TRAINING

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ABSTRACT

Training techniques will vary with the type organization, the geographical location, the subject area, and the organizational involvement.

This paper is concerned with the control and containment training techniques evolved by a manufacturing facility, located on an inland stream, for its operating personnel. This facility, with an oil storage capacity of over 22 million liters (6 million gallons), improves its oil handling and storage abilities by providing stream preservation training for some 200 persons. (Stream preservation training denotes a positive attitude towards oil spill cleanup.) Trainees were maintenance, powerhouse, oil stores, and plant engineering personnel. The objectives were to provide background information and training in techniques needed for spill cleanup. The specific employee behavioral objectives were to make proper notification of an oil spill, to select and use the proper methods of containment and collection, and to learn on-site public relations response. Training was by lecture, including management overview, by demonstration, and by field practice, including oil removal from a test pool, communications, and small boat handling. Evaluation was designed to stress important points covered and to provide feedback on the degree behavioral objectives were achieved.

INTRODUCTION

Training techniques for oil spill prevention and control will vary—with the type organization—governmental, industrial, or academic—with the geographical location—coastal, high seas, or inland—with the subject area—prevention or control and containment—and with the specific organizational involvement—research and development, enforcement, or operations. This paper is concerned with an industrial organization located inland. The subject area is control and containment, and organizational involvement concerns operations.

(Since this paper deals with the control and containment area, I would like to add, parenthetically, to show that General Motors Corporation is also active in the prevention area, that GMC had an oil spill prevention task force operating for some time prior to the Federal Register requirement for preparation of Spill Prevention Control and Countermeasure Plans.)

Topics to be covered in this paper are:

1. determination of need
2. definition of objective
3. development of training program
4. presentation of training program
5. evaluation and follow-up.

Determination of need

The industrial facility involved is the Indianapolis Operations of the Detroit Diesel Allison division. This General Motors division has

a long and generally successful involvement in the handling of large quantities of fuel and other petroleum products.

In 1931 the first Allison aircraft engine was tested. Production engines were delivered the next year and production of aircraft engines has continued to the present. Today production and test of gas turbine engines as well as heavy-duty automatic transmissions require large quantities of fuel and other petroleum products.

Over the years, preventive maintenance, good engineering practices, and most important, conscientious personnel have all contributed to safer petroleum handling. New safety and fire prevention methods are evaluated and, when they improve our capabilities, adopted. Like zero highway deaths, zero spills is a desirable goal. However, as we all know, neither appears attainable. No matter how careful we are spills will occur and leaks will happen.

An evaluation of our responsibilities in the environmental area considering the amount of oil, number of storage points, number of people handling loading and unloading, types of receivals and methods of use, indicated the desirability of additional control and containment measures. One of these control and containment measures was the development of a Stream Preservation Emergency Plan. As part of this plan certain specialized equipment was purchased. Training in the use of this equipment was needed. Several questions came up: Who should be trained? When and where should classes be held? What belongs in the course?

First, who should be trained? For our facility three types of personnel need training: those whose major job is handling oil; those to be called in an emergency; and those involved in facility design and maintenance.

Since a spill can occur at any time the second question, when and where should classes be held, means that all shifts should be trained. Morning classes began at the end of the midnight shift. Scheduled midnight shift employees were paid overtime. Likewise, night employees were paid overtime and brought in early; afternoon classes ended prior to the start of the night shift. Day shift employees were split between morning and afternoon sessions. To minimize travel time classes were held at both major plant locations. This meant that each session was presented four times.

The last of these questions, what belongs in the course, became entangled in the definition of objectives.

Definition of objectives

In discussing the type training needed, the scope was broadened to include action to be taken on discovery of an oil spill and proper control and containment techniques.

During an emergency, personnel might be spread out along a stream. Since this is an urban area, the public might be expected to ask questions. To cover this situation, on-site public relations was added to the objectives.

The behavioral objectives, that is, how the trainee should behave as a result of his learning, became:

1. know whom to notify if a spill is found

2. select and use the proper control and containment methods
3. know how to handle contacts with the public at an on-site location.

Development of training program

Considering the sequence of topics, the behavioral objectives, and the time needed for each topic, five sessions of approximately one and one-quarter hours each were selected. Topics for the five sessions, which will be discussed in the next section, were:

- I. Course outline
 - Overview by management
 - The 5 W's and H
- II. Containment and Collection
- III. Public relations
 - Oil spill cleanup drill
- IV. Workboat handling lecture
- V. Workboat handling field demonstration and drill

Presentation of training program

The training methods used included color slides for nearly all of the lectures as well as samples of all of the hardware discussed. Hardware was demonstrated whenever possible. Movies were loaned by a supplier to show the use of petrophilic rope. Pass-outs were distributed at the end of each lecture session.

Experts were used when possible. The management overview was given by the division's chief of environmental activities. This overview was to motivate the trainees and to let them know that this training had the wholehearted support of management.

The 5 W's and H following the overview covered: what causes spills, what are we dealing with and how much, who detects and reports a spill, what happens after the report, and where does it start and where does it go.

As a part of this session, the proper phone number to call to report a spill was stressed. A communication chain showed what this phone call did.

The containment and collection session stressed the variety of containment and collection methods that could be used—oil booms, underflow weirs, dams, skimmers, sorbers, petrophilic rope. Hardware was shown including a 15-m (50-ft) oil boom. The fact that more than one method can be correct was stressed.

The public relations lecture was given by one of our public relations men. To illustrate public relations techniques, pairs of trainees, selected at the previous session, read three short dialogues between a deputy sheriff and an employee, a curious private citizen

and an employee, and a government investigator and an employee. The other part of this session was an oil spill cleanup drill by trainees selected from each class at random.

Since each spill is different only a representative drill could be performed. One foreman and crew cleaned up the spill using equipment at hand. One foreman and crew chose what type or types of public they would be and asked the cleanup crew questions. This team also critiqued the cleanup crew's public relations response. One foreman and crew critiqued the cleanup crew technique.

Our expert for the workboat handling lecture was the district commander of the local power squadron. This session ended with the trainees tying a few basic knots needed in boat handling. For the actual boat handling, we took eight to ten persons at a time to the local river. Boat operators were selected by their supervision based on previous small boat experience. The other crew members were assigned jobs as bow lookout, communicator, and tow man. A shore communicator was also designated. The oil boom towing bridle was placed in the water; then the boat operator performed maneuvers, as communicated from the shore, to become acquainted with the handling of the boat.

Evaluation and follow-up

We have already mentioned the critique or evaluation used in the public relations session. Evaluation of the other lecture sessions was by oral questions to the group at the end of each session. This questioning stressed the main points of that session. When answers showed that trainees lacked comprehension, the point was restated, and further questions were asked to make sure they understood.

In normal training follow-up, such as teaching a machine operator a new technique, one can observe to see if the operator is using the new technique. In emergency training like we are discussing, only after-the-event follow-up can be used. From contacts made with various trainees, their attitude shows they are alert to their responsibilities to report a spill. Based on the few spill incidents we have had since the training, their response has been prompt and correct.

Summary

This paper has explained how one inland manufacturing facility improved its oil handling abilities by providing stream preservation training for those whose major job is handling oil, for those to be called in an emergency, and for those involved in facility design and maintenance. As a result of this training, personnel know how to report a spill, what action to take to stop it, shut it off, and pick it up, and how to handle on-site public relations.