# GOLF COURSE PESTICIDE CONTAINMENT FACILITIES

**Frank S. Rossi**
**University of Wisconsin**
**Madison, WI**

This past week's headlines were once again filled with reports of a massive oil spill off the coast of Scotland. During the last 12 years following the chemical accident at Bhopal, India, the nuclear meltdown at Chernobyl, in the Ukraine, and regular reports of oil spills, the public awareness of environmental contamination has proportionally increased. The challenge to the average citizen upon receiving this information is to "Think Globally, Act Locally", and so regulations which protect environmental quality are promulgated.

On the national scene, in response to increased awareness and local empowerment, many states have enacted more restrictive pesticide legislation, which impacts the turfgrass industry. Specifically, approximately one dozen states have legislation that requires a pesticide using facility to ensure adequate containment of pesticides during the mixing and loading or rinsing and washing procedures. In Michigan, regulation 637 was signed into law on October 29th,1992 and includes specifications for containment pads. Simply, the *intent of this regulation is to minimize point-source contamination from pesticide handling facilities*.

The regulation states that "if you transfer pesticides from one container to another more than 10 calendar days per year in the same location, you must have a containment pad". The "same location" verbiage relates to any sites within one half mile of each other. Therefore, the potential for in-field mixing is affected if your mixing spots are within one half mile of each other. The regulation allows for a one year before enforcement of this stipulation.

If a pad is required at your facility it must be constructed of impervious material (sealed concrete, plastic, stainless steel, or other approved materials); the pad shall be able to contain what could be released from your largest container in a 1 minute period; pads located outdoors and not covered must be able to contain a 6" rainfall (3504 gallons), be cleaned so that contaminants are not present in rainwater runoff; and finally there must be an emergency shut-off valve within a 30 second distance of the pad. All hand-held equipment is exempt from compliance.

Rule 8 of regulation 637, addresses the handling of excess pesticides and pesticide containing material. Basically, this rule allows the pesticide user to reuse rinsate water, contaminated soil, contaminated speedy dry as a pesticide,. if the user knows the active ingredient of the material and applies it according to label directions.

A facility should be conveniently located from a user standpoint and from a groundwater and surface water standpoint. If you are not sure about location contact your local department of public health

regarding placement near water sources. Ideally, your pad will be integrated with your storage facility, and designed to minimize casual exposure to workers not necessarily involved with pesticide applications.

Construction of and materials for the pad are flexible provided that the pad is impervious and is able to provide adequate containment. Asphalt is not considered impervious and neither is unsealed concrete. General concrete specifications are detailed nicely in the Midwest Plan Service Publication #37 "Designing Facilities for Pesticide and Fertilizer Containment". I strongly urge you to consult this publication, even if you plan to contract the construction with an outside vendor. There are many details regarding cement type, cement handling, curing and sealing, which you ought to be familiar with that are beyond the scope of this article. The overall philosophy behind the choice of cement is to minimize the amount of moisture in the mix so as to alleviate future cracking problems. Additionally, specifications which minimize below ground moisture changes, as well as stemming the concrete pad in for structural support are recommended. Sloping requirements are based on pad size, although cement berms around a 2 to 4% pad slope to a central sump would probably be sufficient.

As a result of the large containment required for pads which are not covered, I strongly recommend incorporating a roof with side walls into your overall design. Additionally, non-roofed pads will need regular cleaning, if a locked run-off valve is to be used, to allow for rainwater to run through a clean pad.

Economic considerations are clearly the motivation behind allowing for the 1 year build-in period. Therefore, it behooves you to begin budgeting for design and construction. Some round figures include $3 to $5 /sq. ft. of concrete, a prefabricated sump (which is highly recommended) could run $250 to $500 if it is constructed of stainless steel, a roof will cost between $2 to $5 /sq. ft., and recycling pumps could run from $35 to $500 depending on the amount of "bells and whistles" you get. So, you can expect to spend between $1500 and $5000 depending on the size of the pad and needed attachments.

I strongly urge you to consult your fellow superintendents and the Midwest Plan Service Publication, and as always there are good contractors and bad ones. Make sure whoever you consult has a good working understanding of the regulation and of your specific needs. The goals of a well constructed facility should be long-term compliance and flexibility which allows for additions should specifications need to be adjusted.