



SAFETY LIGHT CORPORATION
Weekly Report
Week Ending November 07, 2003

Solutient is proceeding based on additional work scope from Safety Light to package for disposal approximately 3,500 ft³ of waste. New, stackable, heavy-duty skids will be used for all drums. Each drum undergoing a 22-point inspection prior to shipment and each skid undergoes a 17-point inspection as part of the final packaging process.

The waste profiling is complete and was emailed to Envirocare of Utah last week for approval. Solutient's waste manager and broker are performing a container-by-container review to verify the waste will meet the Envirocare Waste Acceptance Criteria (WAC). The waste will be shipped in two (2) closed vans and two (2) flat bed trailers. Only boxes will go on the flatbed trailers and all trucks will be exclusive use.

The weather at the site was very poor last week so a tarp was erected between the telephone pole and the process building to allow the drum inspection and skidding process to continue. It is not ideal but it is serviceable and inexpensive.

The construction of the waste storage area is expected to start and be completed next week with acceptable weather. This will allow the packaging of the waste for storage to be completed inside with much greater efficiency.

Solutient is currently preparing a map to place the remaining waste containers in the new storage area. In preparing this map and list of containers was generated and sorted by dose. It appears that roughly half of the remaining containers have a contact dose rate of less than 25 mRem/hr and the other range up to a contact dose rate of 160 mRem/hr. The challenge will be to arrange the containers so that exposure to Safety Light is minimal.

A schedule for the project has been completed utilizing MS Project. The schedule is included with this weekly report. If you do not have this software, please contact Solutient and we will fax a copy to you.

DRAFT Assessment

Storing Disposal Waste and Diffuse Waste in the Same Location

Recent developments have led to the potential requirement to store both high activity waste (Diffuse) and waste awaiting disposal in the same area. This poses a number of operational issues and health physics questions that need careful consideration. A very detailed plan had been developed over the past several weeks that considered all known aspects of this situation and represented the best compromise. This assessment will examine four major areas; physical space, Safety Light exposure, radon management and disposal container quality.

The space was designed to be a RCRA compliant storage area for the remaining diffuse waste. Containers would be stacked no more than 2 high and 4-foot aisles would be provided except where the Sr-90 markers were stored. Additionally, the waste would be arranged so that the exposure to Safety Light employees would be minimal. The waste would also be placed so the removal of the Sr-90 containers would require movement of a large number of other skids. The planned storage volume would be the equivalent of 202 drums of waste. The building could hold 256 drums (1,920 ft³) of waste in a RCRA configuration. By filling the aisles with waste, the storage capacity could be increased to 504 drums (3,780 ft³). The total volume of material at the facility is 4,968 ft³ (3,478 disposal, 1,490 storage). Clearly all the material will not fit into the facility so the excess (1,188) will either have to be stored outside or disposed of.

Safety Light employee exposure is a prime consideration in any operation. If the building is full of both the diffuse and disposal waste, exposure will be even lower than currently expected under the original plan. If the disposal waste only is stored in the yard, then employee exposure will be a significant concern. The shield boxes are available but may be too heavy to move to the yard with the current equipment. The shield boxes alone may not provide enough shielding in all directions so additional shielding may be required. The diffuse waste could be stored at the far end of the facility until after all the waste is shipped. The shield boxes would be used and a careful survey of the fence and adjoining areas would be performed.

Radon management will be critical for any combined storage. The storage building is expected to become an airborne area fairly quickly after the diffuse waste is stored there. This would be acceptable for very brief entries for inspection but would require a full health physics program for extended stays. Due to the decay of the radon, the area is also expected to become contaminated during the same period. During the sorting phase, radon levels typically were in the 80-to 100-pCi/l ranges with 4 drums in the area. The nature of the sorting process allowed the maximum radon release to take place. The current storage mode will limit the release of radon to an extent but there will be a large inventory of drums in the building. One potential option is to build a plastic structure similar to the processing area around the waste and ventilate this with large (3 foot diameter) fans with no filtering system directly to the environment. This is what is

happening with the drums in storage now. The only difference is there is a point source in the future. PADEP is evaluating this element at this time.

One of the primary concerns is the quality of the disposal containers. At this time, essentially all of the containers have been processed for disposal. The mixture of disposal and storage containers in the open environment of the yard had resulted in α contamination in the range of 60 dpm on flat surfaces. In a closed environment like the storage without powered ventilation, radon will reach equilibrium in approximately 30 days and could well be in the 100 pCi/l range. This level will very quickly contaminate any surface in the area. Solutient expected that except for very brief Safety Light inspections, no entry with respiratory protection would take place. The containers will have exceeded their storage life probably before disposal can take place. If the containers are still serviceable, then they can be painted for disposal.

Conclusion

The storage area should initially be used to hold the waste to be disposed of at a future date. When disposal is complete, the storage containers should be moved into the building.