

Parks Need To Gear Up For 'Can't Happen Here' Crises

By Cat Hawkins

Many of the units of the National Park System are adept at playing "what if" games, and it is fortunate that they are. These parks answer "what if" questions with emergency response plans: "what if" a climber fails to report?, "what if" a hurricane warning is posted? Search and rescue plans, hurricane contingency plans, etc., are products of the "what if" games, and they serve well to guide actions during emergencies.

Facing many, if not *most* parks today is a potential emergency for which few have played the game. EPA is aware of the potential however, as this agency initiated a program called L.U.S.T. (now shortened to U.S.T.), an acronym for Leaking Underground Storage Tanks. Under this program, agencies are required to inventory all underground fuel storage tanks. Remaining ignorant of and unresponsive to warning signs of leaking fuel storage tanks may bring effects as long lasting as those caused by any hurricane.

Mount Rainier National Park experienced just such an emergency this past summer, and learned that shooting from the hip is no substitute for a practiced aim. During Spring 1985, park visitors reported smelling oil at two locations. In early July 1985, as snow relinquished its winter-long hold on Paradise, the fuel oil smell mystery was solved. Just below the Paradise Visitor's Center, at the 5400' elevation, an acre of alpine meadow lay covered with oil leaked from an underground fuel storage tank.

Through this event, Mount Rainier's staff became aware of shortcomings and ignorance within park operations that delayed report of the spill and actions

to manage the site. The event is generic; it could happen in any park. Similarly, shortcomings in dealing with the situation are not unique to Mount Rainier. Although experience is a wise teacher, learning need not occur the hard way. This article describes aspects common to many parks and actions they might take to direct the "what if" game of planning.

In 1967, three 10,000 gallon underground fuel storage tanks were installed to supply the newly-constructed Paradise Visitor Center. Since then, records of fuel consumption were kept by Rainier's maintenance division only to indicate when reordering fuel was required.

Shortcoming No. 1: The record established for reordering fuel was inadequate as a tank monitoring scheme. The three 10,000 gallon tanks were interconnected when installed so fuel could be moved between tanks. Because fuel was moved from tank to tank, and fuel levels checked infrequently (only as needed to determine reorder time), the leak went undetected.

On June 10, 1985, visitors entering Rainier's Hiker Information Center reported smells of fuel oil from Narada Falls, two miles downstream from Paradise. One visitor complained that the picnic area near Paradise "smelled like a service station." Clues to the mystery of "where did it go?" were beginning to accumulate, yet these reports were not compiled, since they were made to different personnel at different times.

Shortcoming #2: Again, word that there might be something wrong failed to proceed far up division

Continued on page 21



Aerial view of Paradise Meadow shows parking area at far left, oil draining in at top left-of-center, and oil draining out at right just below center (into Paradise River). The white patches are some of the several thousand absorbent pads used to soak up oil. Dark areas are dead or dying vegetation.

Parks Need To Gear Up

Continued from page 20

lines. A huge oversight? Not really, for although melt-out was progressing quickly, Paradise still remained covered with several feet of snow. Followup of visitors' reports verified a smell of fuel, but the odor was diffuse and its source still well hidden. As for Narada Falls, the oil likely passed this point quickly, for very little odor lingered. Visitor reports remained a curiosity, but personnel who investigated saw no need to raise the red flag.

By June's end, the last few feet of snow rapidly disappeared from Paradise and the smell of oil was strong. July 3 finally saw the meadow revealed, almost an acre covered with oil. During the previous winter, leaking fuel oil from one of the 10,000 gallon tanks had traveled downhill through soils disturbed in building the Paradise road and flowed into the snow-pack on the meadow below. The problem — oil in the meadow — was now evident, but procedures for its management were unclear.

Shortcoming #3: Park personnel were unprepared for an event of this type and knew only vaguely how to respond. After all, who would expect an oil spill at Mount Rainier? (Could this be *your* park?)

The "learn as you go" approach to management of the site was as successful in outcome as any might have been by this stage of the spill. However, the process was far more confusing and time consuming than if it had followed a thoroughly researched contingency plan. Through a maze of phone calls, involving the Pacific Northwest Regional Office, Regional Environmental Officer for the Department of the Interior (Office of the Secretary) Charles Polityka, EPA, USGS, local water analysis labs, local environmental cleanup companies, etc., mop up of the site and water sampling began.



Oil-soaked pads are piled in the Paradise Meadow parking area, awaiting disposal by truck.

In retrospect, the process seems uncomplicated, but at the time, never having dealt with or imagined such an event, park managers were bewildered. However, an image of the event's management as "well-intentioned but without direction" would be incorrect. Involved personnel notified appropriate authorities, outlined objectives and alternatives for site cleanup, and kept voluminous records of daily events. Bill Longston, of the EPA Environmental Emergency Response Team, noted that in none of his experience dealing with spills had he ever found one so well documented.

In generating alternatives for management of the site, Rainier's natural resource planning staff first looked to EPA for clearcut, step-by-step answers to



Doing their thing, these white "diapers" sop up spilled oil without absorbing water in Paradise Meadow.

what should be done about cleaning up the site. The staff was given only one definite response: that the park was required to monitor waters draining the meadow and demonstrate decline of oil and grease amounts as cleanup of the spill progressed.

EPA initially demanded excavation and removal of contaminated soil to a hazardous waste disposal site. However, Longston noted that EPA "took the position to back off our normal aggressive approach" since Mount Rainier is a federal, not private, facility, and as pointed out by Park Supt. Neal Guse, "The Park Service has its own mandate, which differs considerably from any other agency's or private concern's. We have a responsibility to clean up an emergency spill without doing more damage in cleanup than was done by the original accident."

This formed the objective for management of the site, as cleanup operations proceeded. For safety, the site was restricted to visitors as hundreds of "diapers," designed to absorb oil but not water, were acquired from a Seattle environmental cleanup company and applied to wet areas of the meadow. The scene seemed misplaced, as staff members wearing disposable white paper "moon suits," rubber boots, and gloves wandered about the oil soaked alpine meadow. Two absorbent booms were placed across the creek draining the meadow, and two sandbag dams installed with underflow pipes to allow surface pooling and absorption of oil. Water sampling within the site, in unaffected areas, and downstream of the spill for approximately two miles began immediately. Sampling continued weekly the following three weeks and twice per month thereafter. Photopoints were established during cleanup, and a park botanist began monitoring vegetation damage and recovery.

The suspected tank was pumped dry and tested, and a leak detected, though its nature or position could not be determined. The specific cause of the leak may be related to design, structure, or geology. No test could produce a conclusive answer, but gradual deterioration of the tanks of this "vintage" is to be expected. All three 10,000 gallon tanks at Paradise are scheduled for replacement, with the first

new tank to be installed this year. New tanks will be double walled, made according to Steel Tank Institute specifications. In addition to testing the tanks, EPA required drilling to determine if oil remained pooled beneath the leaking tank. Small amount of oil were found, though not in quantities substantial enough to require excavation.

Prior to winter's claim of the meadow in 1985, the spill site was made ready for a similar event this spring. It is quite possible that melt waters may purge oil remaining in the meadow's soil causing watershed contamination once more. Clean containment booms were placed across the stream and sandbag dams fitted with additional underflow pipes to accommodate spring's meltwater torrent. The snowpack is now being monitored along transects in suspected areas of leakage or potential oil pooling. Also, a daily monitoring program to establish accurate records of contents in

Continued on page 23

the other tanks is underway.

Rainier's natural resource planning team has prepared an emergency response plan with guidelines for actions to follow a spill. Legislation pertinent to spill emergencies are RCRA – Resource Conservation and Recovery Act of 1976 – and CERCLA – Comprehensive Environmental Response Compensation and Liability Act of 1980. RCRA amends the Solid Waste Disposal Act and regulates, among other things, management of hazardous wastes. Depending upon quantities involved, disposal of cleanup materials from a spill may be governed by this act as well. RCRA and CERCLA both provide for strict liability of ALL involved persons, including the federal government; RCRA specifically waives "sovereign immunity."

Applicable Interior documents are the Departmental Manual, Park 110, DM 22.1 Office of the Secretary, Chapter 22.1, Office of the Environmental Project Review; Part 296, DM 2.1, Chapter 2, Oil Spill and Hazardous Waste Releases; Part 910, DM 4.0, Interior Emergency Operations, National Oil and Hazardous Substance Contingency Plan. Specifically, "the bureau" (NPS in this case) is responsible for immediate notification of the National Response Center and may be criminally liable for failure to report oil spills or hazardous waste problems.

Following notification of the National Response Center (800-424-8802), containment of a spill, then emergency cleanup, are priority procedures. Contractors available for cleanup and cleanup materials are listed in Rainier's plan, as are instructions to train park staff in advance on how to deal with hazardous waste spills. Following recommendation from Interior's Environmental Officer Polityka, the plan calls for communication with the Regional Director during spill cleanup almost hourly, not merely once or twice a day. Polityka suggested that the Regional Office have primary and alternate representatives to aid on-site coordination and decision making. A daily status report should be prepared to include 1) action of the day, 2) action for tomorrow, 3) names of cleanup workers, hours they worked, personal protective equipment used, any contacts with the chemical, any medical emergencies, etc., 4) equipment used and money spent.

If relevant, water sampling should be done following approved methods for sample collection and analysis. During transport of samples to a lab for analysis, a "custody procedure" and signature log should be maintained. Photopoints should be established and monitoring begun to assess damage and recovery to flora and fauna associated with the spill. Available literature should be consulted for studies following spills in similar areas. Finally, the subject should be used as interpretive material to educate visitors, even *before* a spill occurs to prompt their attention.

That an oil spill occurred in an alpine meadow at Mount Rainier shows that it can happen anywhere. Park staff were forced to handle the event without benefit of having played the "what if" game. Hindsight is 20-20; other parks can learn from the experience of Mount Rainier to 1) develop inventories and monitoring procedures for fuel storage tanks, and, 2) develop emergency response plans for oil spills in their area. Fuel storage tanks do not last indefinitely; spills can happen and *will* happen.

Hawkins is an NPS Natural Resource Specialist trainee, currently assigned to Mount Rainier NP.