Caribbean Regional Response Team
Pre-Authorization Policy for Use of Solidifiers

Prepared by the Caribbean Regional Response Team (CRRT)
Response and Technology Committee
01 May 2006

May 3, 2006

RECORD OF CHANGES

Change Number	Effective Date	Date Entered	Entered By:	Page Check

Caribbean Regional Response Team (CRRT)

From: Caribbean Regional Response Team

To: Distribution

Subject: LETTER OF PROMULGATION: CRRT Limited Pre-authorization and Use Policy for Chemical Countermeasures: Solidifiers

1. The Caribbean Regional Response Team (CRRT) has approved the attached policy for the limited use of solidifiers as listed and defined in the National Contingency Plan (NCP) product Schedule under subpart J. This policy covers the pre-approved use of solidifiers for control, containment and enhanced recovery of oil in ocean, coastal waters, and land throughout the CRRT area of responsibility. This policy hereby replaces any other policies, guidelines, or plans related to the use of solidifiers now in force throughout the CRRT. This policy will be used in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), local Area Contingency Plans (ACP), and Regional Contingency Plans (RCP) that are current and in force throughout the region.

2. This policy may become part of the local Area Contingency Plan (ACP) maintained by the U.S. Coast Guard as well as Regional Area Contingency Plans maintained by the Environmental Protection Agency (EPA).

3. This policy shall be followed as closely as possible, but has not provided for every possible contingency that might occur. Deviations from this policy are authorized when necessary in the best interest of safety or protection of resources. The CRRT must be made aware of any deviation as soon as possible.

4. This policy cannot be changed or altered without notice and opportunity for comment provided to each signatory official or designated representative to the CRRT.

5. Any signatory official or designated representative to the CRRT can petition to amend or revise this policy and/or withdraw approval at any time.

6. All comments and requests for revision shall be directed to the CRRT Response and Technology Committee for consideration by the CRRT.

7. The CRRT Response and Technology Committee will remain abreast of developments and changes for solidifier products and use which may provide cause for recommending revision to this policy, The Response and Technology Committee may be tasked at any time by members of the CRRT to provide additional information or guidelines pertaining to use of solidifiers if available.

8. This Letter of Promulgation remains in effect until canceled by a competent authority.

DATE : _____

U.S. Environmental Protection Agency CRRT Co-chair: _____

U.S. Coast Guard CRRT Co-chair: _____

Encl: (1) CRRT Limited Pre-approval and Use Policy for Chemical Countermeasures: Solidifiers

** DRAFT – DO NOT CITE OR QUOTE – DRAFT **
May 3, 2006

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Introduction

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CRRT LIMITED PRE-AUTHORIZATION AND USE POLICY FOR CHEMICAL COUNTERMEASURES: SOLIDIFIERS

INTRODUCTION:

The Regional Response Team for the Caribbean (CRRT) has developed this limited pre-approval and use policy to allow for the use of solidifiers as listed on the U.S. Environmental Protection Agency (USEPA) Product Schedule for mitigation of oil spills. Solidifiers are considered an alternative to sorbents or mechanical recovery to recover small amounts of oil or thin sheens from the water surface. They also have been shown to be useful by creating solid barriers that can limit spreading, thereby enhancing containment, collection, and recovery.

Solidification of oil is an oil spill countermeasure that was evaluated by the CRRT as a candidate for developing preauthorization for use. Due to the potential for solidifiers to: 1) add to the increased effectiveness of response in certain situations; 2) the fact that currently listed solidifiers are not a significant concern from a toxicological point of view; and 3) they don't sink once reacted with oil, the CRRT agreed that preauthorization for use of solidifiers under certain conditions was desirable.

Preauthorization is necessary because the product must be on hand at the spill site and applied immediately to be effective for most spills. This pre-authorization agreement is for the use of solidifiers in all applications. However, the use of solidifiers contained in booms, socks, pillows or other similar manner may be considered for use in the same manner as sorbents provided all materials are fully recovered and disposed of properly.

Application ratios of loose powder form of solidifiers range from 1:1 to 1:10 by weight and are best used to treat relatively small volumes of spilled oil. Using solidifiers for small spills has the following benefits:

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- The treated oil becomes immobilized and will not spread further, on the surface or into the ground.
- Solidifiers can be added to the perimeter of the oil, forming a solidified barrier to prevent further spreading, rather than treating the entire spill volume.
- The solidified oil can be removed with readily available hand tools, rather than requiring liquid storage and pumping systems.
- Solidifiers are effective on thin sheens whereas standard sorbent materials commonly do not pick up sheens.
- Solidifiers may, in some cases, be more effective on slow continuous small releases than sorbents.

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Under the NCP (Section 300.910), Regional Contingency Plans and Area Contingency Plans may include preauthorization policies that address the specific contexts in which oil

spill control products should or should not be used. Factors for consideration in the preauthorization policy include:

- Potential sources and types of oil spilled
- Sensitive resources at risk from spilled oil
- Available equipment and adequately trained operators
- Amount of oil to be treated
- The available means to monitor product application, effectiveness, and recovery

SECTION I

Purpose

This policy implements Subpart J of the National Oil and Hazardous Substances Contingency Plan (NCP) and provides for the limited use of solidifiers as listed on the EPA product schedule on oil discharges within the Caribbean Regional Response Team area of responsibility. This pre-authorization applies for use on ocean and coastal waters, inland waters, and on land when the use is in accordance with all protocols and conditions of this policy. This authorization does not apply to use in aquifers and other areas where recovery would be limited, difficult or unlikely.

The members of the CRRT agree that solidifiers may offer enhanced response capability under certain conditions, leading to prevention of serious environmental damage, and reduced threat to the public health or welfare. This policy establishes criteria under which solidifiers may be applied in the environment within the CRRT region.

Authority

Subpart J of the National Oil and Hazardous Substances Contingency Plan (NCP) provides that the pertinent Regional Response Team (RRT) representatives, including the EPA, DOC, DOI, and the affected State(s) may pre-authorize the use of chemical countermeasures for oil spill response.

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Scope

The USCG, EPA, DOI, DOC as well as Puerto Rico and the US Virgin Islands have adopted the use of solidifiers as an approved tool to respond to spilled or discharged oil on the waters or lands within the jurisdiction of the CRRT. This policy includes protocols under which solidifier use must be conducted. Use outside the limitations of these protocols shall be on a case by case basis as evaluated and authorized by the incident specific CRRT.

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Application of solidifiers to remediate oil spills occurring in the CRRT region will be conducted in accordance with this policy and in accordance with any Letters of Agreement established between the USCG, EPA, DOI, DOC and the affected State(s). The pre-authorization to use solidifiers as provided by this policy is in effect only as dictated by all protocols established in Section III. This pre-authorization applies only to the spill response countermeasure known as solidifiers as listed on the current EPA product schedule. The CRRT may review any listed solidifier product at any time and may exclude them from pre-authorized use dependant on environmental, health or safety concerns.

SECTION II

Limited Pre-Authorization of Solidifier Use-General Considerations and Protocols

Potential Sources and Types of Oil

Specific solidifier formulations have been shown to be effective on all types of oil. Mixing the product with the oil is more difficult with viscous oils, therefore, solidifiers are generally considered to be more effective with lighter oil types. The best solidifier formulation(s) should be selected for the types of oil to be treated and spill conditions. Pre-testing of solidifier brands with specific oil types may be desired in order to better select the best candidate product.

Examples of the potential sources of spills where solidifier use is considered to have a potentially beneficial and routine niche are listed below:

1. Spills to Water in Marinas, Harbors, Ports, and other Industrial Areas where:

    - Small spills occur frequently
    - Spills are mostly light refined products that quickly spread into thin sheens that are difficult to contain and recover
    - Water currents are slow and there are structures that provide some in-place containment
    - Products could be stored at likely sources of spills (e.g., fueling docks)
    - Facility personnel can be trained in the proper use, recovery, and disposal of the products and treated oil

2. Spills on Land where:

    - Spilled oil could flow off-site into ditches and creeks
    - Oil has the potential to soak in to the ground, contaminating soils and groundwater
    - Facility personnel can be trained in the proper use, recovery, and disposal of the products and treated oil
    - Examples include fueling and oil loading stations, rail yards, and oil storage facilities

Sensitive Resources

Currently listed solidifiers in general have very low if any acute aquatic toxicity, primarily because they are insoluble in water. However, other concerns have been raised, including:

- Toxicity associated with ingestion of unreacted product;

- Ingestion and fouling hazard of treated oil or partially treated oil that is not contained or which escapes containment;
- How treated oil would interact with sensitive habitats such as wetlands; and
- Whether treated oil will be more persistent in the environment and tend to weather and sink over long periods of time.

Due to the fact that solidifiers identified for use under this pre-authorization are not toxic, don't sink, are essentially inert to organisms, and render the toxic components of reacted petroleum bio-unavailable to organisms that may ingest them, no special resource restrictions for their use have been identified at this time. As long as the products are applied as directed and fully recovered from the environment, no significant adverse environmental impacts from the use of solidifiers are expected. Their use, as allowed under this policy, will create no more risk than the use of commonly used sorbent materials which are not regulated. Solidifiers that are manufactured in high quality booms, socks, pillows, or other effective containment devices that do not allow for the possibility of loose material to enter the environment may be considered for use in the same manner as sorbents, provided all materials are fully recovered and disposed of properly. Application of solidifiers in loose form will be more restricted as discussed below.

Standard good oil-response practices are required, such as proper application of the solidifier, minimization of foot traffic and trampling of oil into the sediments/soils or damaging vegetation, avoiding application of product directly on to wildlife, and recovery of all product and treated oil.

Any use restrictions identified through Section 7 consultations with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), as required under the Endangered Species Act as well as any requirements noted under consultation for Essential Fish Habitat (EFH) with NMFS must be complied with (see Section IV; appendix 2). All stipulations, controls, or limitations identified by the signatory States or Federal Natural Resource Trustees must be complied with as well (see Section IV; appendix 1), Additionally, the State Historic Preservation Officer should also be notified/consulted on the use of solidifiers, as required under the National Historic Preservation Act, if use of a solidifier is in an area where there is an identified potential for impacts to cultural, archeological, or historic resources.

Application Methods and Adequately Trained Staff

Concerns with the application of solidifiers in loose powder form include excess release of product to the environment due to poor application techniques and over application that can lead to increased volumes of waste material. The pre-authorization includes application and recovery requirements with the intent of providing guidelines for the proper use of solidifiers in loose form without being overly restricted. It is important that responders be adequately trained in the proper use of solidifiers.

Preauthorization Conditions

1. Product Information – This preauthorization applies only to those products that have been listed on the NCP Product Schedule (effective 10/05). The purpose of this condition is to make sure that adequate information on product composition and toxicity are available in order to be considered for inclusion in this policy. The Product Schedule must be reviewed to ensure that no new solidifiers have been added that would cause concern if used in the environment and hence would not be authorized for use under this pre-authorization policy.

2. Amount of Oil to be Treated – Solidifiers in loose form may be used on any oil type under 500 gallons (this is the treatment volume, not the total spill volume). No restriction is noted for solidifier used in contained form (booms, pillows, socks) as long as complete recovery is accomplished.

3. Amount of Product Approved for Application – No more than 1,000 pounds of loose solidifier product can be applied in response to a single treatment event under this preauthorization. This limit was based on an application ratio of 1:4 and the treatment volume limit of 500 gallons, as supported by manufacture's application rate guidance. Application of additional amounts requires a request to the CRRT.

4. Application/Recovery Requirements –

    a. On Water (includes rivers, streams, creeks, lakes, ponds, wetlands, open ocean, marine and coastal waters, etc.). In all cases, the application of loose solidifier material must be continuously monitored to ensure material is completely contained and recovered. Recovery must be conducted as soon as the product is no longer effectively removing oil.
        i. Apply loose product only directly onto oil. No loose product will be applied to flowing water bodies unless the oil is physically contained, such by hard boom or inside a lock or other effective containment structure. The product will be applied in a manner that prevents loss from wind drift, overspray, and spillage.
        If environmental conditions such as wind, currents, weather, prohibit effective containment and recovery of the applied solidifier and treated oil, then pre-authorization does not apply.
        ii. Product contained in booms, pillows, pads, etc. can be deployed in flowing waters as long as they are monitored and replaced prior to failure of containment systems.
        iii. The loose product will be applied only by responders that have been trained in the proper application of the product. The intent is to prevent misuse and over application.
        iv. No loose product will be applied directly onto wildlife (e.g., birds, mammals, reptiles, fish, shellfish) or in sensitive wetland or coastal/marine habitat where resources could be adversely affected

if complete recovery is not accomplished or in areas that may affect known cultural, archaeological, or historic properties. Pre-authorization for use of loose solidifier material does not apply for specially managed waters or lands including designated marine sanctuaries, preserves, or national parks without consultation with the proper resource and property manager.

v. All product and treated oil will be recovered.

b. On Land
   i. Only apply loose product directly onto oil or to create a barrier ahead of flowing or potentially mobile oil. No loose product will be applied to drainages in an attempt to wash it towards oil downstream.
   ii. Solidifier booms and pillows can be placed in drainages to intercept oil. However, all materials will be monitored and replaced to prevent failure of containment systems.
   iii. This authorization does not apply to use in aquifers and other areas where recovery would be limited, difficult or unlikely.

c. Waste Disposal
   i. All recovered wastes will be disposed of properly.

5. Monitoring Requirements – During operational use of the loose form solidifier product, monitor the effectiveness and effects of the application, including:
   a. The product: oil ratio needed to solidify the oil. When the amount needed to solidify the oil exceeds the recommended application rate by a factor of 2, determine whether further treatment is warranted.
   b. The properties of the treated oil (firm mass, sticky, non-sticky, etc.).
   c. The efficiency of treated oil recovery.
   d. The degree of damage to substrate and vegetation during application and recovery.
6. Reporting Requirements – As part of the response documentation, the responsible party or responding organization must maintain records of the following information:
   a. Amount of loose solidifier used
   b. Type and amount of oil treated
   c. Weight and/or volume of treated oil recovered
   d. Evaluation of effectiveness of the application

   Any use that results in problems, including: non effectiveness, inability to contain and recover solidifier and treated oil, or any observed impacts to wildlife, aquatic resources, sensitive habitat, or known cultural, archaeological, or historic properties must be reported as soon as feasible to the CRRT through the National Response Center at (800) 424-8802.

SECTION III

Signature Page

_____ _____

Captain J.J. O'Connor **date**
United States Coast Guard
District Seven
CRRT Co-Chair

_____ _____

Eric Mosher **date**
EPA Region 2
CRRT Co-Chair

_____ _____

Genaro Torres **date**
PR EQB

_____ _____

Leonard Reed **date**
USVI DPNR

_____ _____

Gregory Hogue **date**
DOI

_____ _____

Bradford Benggio **date**
DOC

SECTION IV

Appendices

- 1 Letters of Agreement

- 2 Consultation Requirements
  -USFWS Section 7
  -NMFS Section 7
  -NMFS Essential Fish Habitat

- 3 Solidifier Information and Comparison with Sorbents

- 4 List of Solidifier Products Covered by This Policy

- 5 Response Contact List

Appendix 1

Letters of Agreement:

Appendix 2
Consultation Requirements:

- USFWS Endangered Species Act Section 7
- NMFS Endangered Species Act Section 7
- NMFS Essential Fish Habitat

Appendix 3

What are the Benefits/Shortcomings/Comparisons of Using Solidifiers versus Sorbents?

Table 1. Benefits/shortcomings/comparisons of using solidifiers versus traditional sorbents.

Issue	Benefits	Shortcoming	Comparison with Sorbents
Effectiveness with Light Oils	Work best with light oils.		Light oils spread into thin slicks that are difficult to recover with sorbents.
Effectiveness on Sheens	Can remove even light sheens.	May Tend to overapply on sheens.	Sheens are very difficult to pick up.
Effectiveness with Heavy, Viscous Oils	Immediate broadcast over the oil will enhance solidification	Reduced effectiveness with emulsified, viscous oils due to poor mixing.	Depends on sorbent type; oil snare is very effective with viscous oil.
Low Temperature	Alternative response for cold water/ice conditions	Increased time to solidify at low temperatures due to increased oil viscosity (not sure there is sufficient data to say 'reduced effectiveness').	Temperature may have little effect on sorbents. (believe that sorbents also have reduced effectiveness at low temperatures).
Flash Point	Treated oil is less flammable		Absorbed oil may be less flammable.
Worker Training	Improved response time and effectiveness.	Need training in proper use of new products.	Sorbents are a very familiar product, but there is often overuse.
Access Limitations			Same requirements for access to deploy/retrieve.
Application Considerations	Likely to be used by trained individuals in specific response conditions.	General broadcasting of loose material could be a problem in open areas and in high wind conditions that would inhibit effective containment and recovery.	In contained form (booms, pillows and socks), would be the same as for sorbents. In loose form, both solidifiers and sorbents have problematic containment and recovery issues.
Recovery Methods	Manual recovery from effective containment should be straight forward.	Effective containment is an issue-especially in conditions of currents, tides, and wind. Recovery of all material from the environment is highly desirable due to product persistence.	In contained forms, recovery of solidifiers should be the same as sorbents.

Table 1. Cont.

	Benefits	Shortcoming	Comparison with Sorbents
Monitoring Considerations	Can monitor visually for effectiveness during both tests and application.	When used in loose form, constant visual monitoring should ensure: 1) proper and complete containment and recovery; 2) no adverse wildlife or fish impacts. Use should be modified or stopped if either condition is not met.	Basically similar to sorbents, but less passive, especially when using loose material. All material should be recovered as soon as it is no longer effective at removing oil.
Pickup Time for Treated Oil		Can be slow with loose product.	About the same when products are contained as booms, socks, etc.
Application on Solid Surfaces	Effective on solid surfaces; treated oil is a dry solid that can be swept up. Also can form a containment barrier.		Likely more effective than sorbents.
Waste Volume	Will increase volume proportional to application rate.		Sorbents create large waste volumes.
Waste Weight		Generates waste weight, equal to the weight of added solidifier	Sorbents themselves add little to waste weight, but, besides oil, sorbents also pick up significant amounts of water.
Waste Disposal - Landfill	More likely to pass leach test for landfill.		Less likely to pass leach test for landfill.
Waste Disposal – Incineration	Ideal potential for conversion of waste to energy. High btu value, would have to be managed as a separate waste stream; need preplanning to assess possible waste to energy users for this material.		Sorbents can also be incinerated but may have lower BTU compared to solidifiers, depending on the product.
Waste Disposal –Industrial intermediate for recycling of encapsulated product and oil	Can be recycled via introduction into other industrial processes, including: asphalt modification; rubber additive, etc.	Must meet TCLP and EPA / state testing procedures	Not applicable for most traditional sorbents

Appendix 4
List of Solidifier Products Covered by This Policy:

1) M-17 M
CI AGENT (formerly
CHEAP INSURANCE &
PETRO-CAPTURE)
OnSite Waste Management / IRST LLC
11760 Commonwealth Drive
Louisville, KY 40299
PHONE: (502) 267-0101
(800) 255-6073
FAX: (502) 267-0181
(Mr. Dan Parker)
02/25/94 06/14/95*

2) M-19 M
WASTE-SET #3200®
C.B Environmental Inc.
3374 West River Drive NW
Grand Rapids, MI 49544
PHONE: (616) 784-0770
FAX: (616) 784-5018
(Mr. Cal Blystra)
04/22/96 04/22/96

3) M-20 M
WASTE-SET #3400®
C.B Environmental Inc.
3374 West River Drive NW
Grand Rapids, MI 49544
PHONE: (616) 784-0770
FAX: (616) 784-5018
(Mr. Cal Blystra)

4) M-23 M
ALSOCUP
REVCOM Associates 1550 Rimpau Avenue #53 Corona, CA 92881
PHONE: (951) 737-0104 FAX: (951) 737-5500
E-MAIL: revcom@sbcglobal.net (Mr. Dave Naylor - President)
11/23/98

Appendix 5
Response Contact List

1) National Response Center
2) Environmental Protection Agency
3) USCG Sector San Juan