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USCG-2003-16688-4

**Towing Safety Advisory Committee (TSAC)**

**Final Report**

**Potential Addition of Ammonium Nitrate and Ammonium Nitrate Fertilizers that are Classified as Oxidizers to the Certain Dangerous Cargo (CDC) Definition**

**28 January 2004**

1. Final Report (Cover Letter)
2. Working Group Minutes
3. TSAC Task Statement 03-03

## **TSAC REPORT ON TASK 03-03**

To the United States Coast Guard on the addition of ammonium nitrate and ammonium nitrate fertilizers that are classified as oxidizers to the United States Coast Guard CDC definition.

This task was put before TSAC and CTAC at approximately the same time. Due to the overlapping assignments a joint work group was formed. Joint Co-chairs from TSAC were Ms. Jennifer K. Carpenter and Mr. Rex Woodward. CTAC Co- chairs were Ms. Alice Johnson and Mr. Paul Book. Many other work group members supported the 4 Co-chairs. Other participants and those having guidance and input into this task were representatives from chemical companies, ammonium nitrate producers, handlers, towing companies, fleeters, the Fertilizer Institute, ATF, ONI, USCG, USACE and AWO.

The anticipated impact of adding ammonium nitrate or ammonium nitrate fertilizers in bulk to the CDC list is discussed in the minutes of the work group (see attachment). Briefly, it would affect approximately 8,000 to 9,000 additional barges, 30 – 40 fleet operators, 60-80 fleet boats and 160 line haul vessels. If ammonium nitrate and ammonium nitrate fertilizers were added to CDC list, these vessels or facilities would fall under the MARSEC requirements thus having to file VSP's and FSP's.

The anticipated economic impact would be left to the USCG to determine. However, it should be noted that there are many mitigating economic impacts if ammonium nitrate and ammonium nitrate fertilizers are added to the CDC list.

The anticipated security impact should be strongly looked at. At this point, there are abundant concerns in the work group that by moving bulk ammonium nitrate and ammonium nitrate fertilizers to the CDC cargo list it would force this cargo from waterborne commerce, thus not only causing economic impacts but also increasing security exposure by putting in motion many more trucks or rail cars moving ammonium nitrate or ammonium nitrate fertilizers.

The SSI supplied by the ATF and ONI was very important to the work group. It provided us with valuable information on ammonium nitrate and ammonium nitrate fertilizers. It also created questions that remain unanswered. What effect would a 1500-ton barge of ammonium nitrate or ammonium nitrate fertilizers if exploded have, knowing that the barge is 9 foot deep in the water when loaded?

The quantity of ammonium nitrate and ammonium nitrate fertilizers carried by barge each year is approximately 900,000 tons (see notes). The large

majority of this is imported by vessel and loaded into barge and shipped to various facilities on the inland river system. It appears that most coastal shipments are offloaded from ships and moved by non-waterborne carriers.

### DISCUSSION:

1. By moving ammonium nitrate or ammonium nitrate fertilizers to the CDC list, the security exposure that may be created by the possibility of putting bulk, river-borne transportation onto highways or railways is an unknown factor to this work group.
2. If ammonium nitrate or ammonium nitrate fertilizers were added directly to the CDC list, the economic factors as discussed by the work group papers are unknown. .

Following is the recommendation voted on and approved by TSAC at the Public Hearing on 01/27/04.

### FINAL RECOMMENDATION:

#### **Recommendation #1:**

Amend the vessel special permit for ammonium nitrate and ammonium nitrate fertilizers under 46 CFR 148.01-9 (safety requirements). Add security requirements to special permits. This special parameter is already in place with the carriers of ammonium nitrate and ammonium nitrate fertilizers and should be amended to include the following security requirements:

1. These security requirements should be set by a USCG/Industry work group and should include reporting daily whereabouts to USCG as well as other security requirements the work group deems necessary. TSAC members recommend that a work group be formed to setup the parameters of handling and shipping Ammonium Nitrates and that this work group should work closely with USCG, CTAC and other industry representatives to achieve a cohesive agreement with all groups affected.

**TOWING SAFETY ADVISORY COMMITTEE (TSAC)**  
**EXCERPTS FROM TASK STATEMENT**  
**Task 03-03**

**II. TASK TITLE:**

Addition of ammonium nitrate and ammonium nitrate fertilizers that are classified as oxidizers to the Coast Guard Certain Dangerous Cargo (CDC) definition.

**IV. TASK:**

1. Establish a working group to advise the Coast Guard on the anticipated impact within the towing industry should dry bulk ammonium nitrate and ammonium nitrate fertilizers that are classified as oxidizers be included in the definition of Certain Dangerous Cargoes.
  - a. A joint working group was formed between TSAC and CTAC to facilitate a recommendation to the Coast Guard on whether ammonium nitrate and ammonium nitrate fertilizers should be classified as CDC cargos.
2. Review the research conducted by the ATF and ONI to determine its relevance to barge and towing industry operations.
  - a. Security Sensitive Information was presented to members of the work group in a meeting at Coast Guard Headquarters in Washington DC. At this meeting and at follow up meetings it was concluded that there is an exposure to the barge and towing operators whom handle ammonium nitrate and ammonium nitrate fertilizers.
3. Estimate the quantity of pure dry ammonium nitrate of Class 5.1 (70% or more by content) carried annually by barge on the U.S. inland and coastal waterways. (Data sources: US Army Corps of Engineers, barge operators.)
  - a. Quantity of an ammonium nitrate or ammonium nitrate fertilizer ship by barge each year is approximately 900,000 to 1.1 million short tons. These figures were supported by the Fertilizer Institute and cross-referenced with US Army Corps of Engineers Waterborne Transportation Division.
4. Determine whether the need exists to add dry bulk ammonium nitrate and ammonium nitrate fertilizer classified as oxidizers to the CDC

definition, and if so, whether there is a need to distinguish between the carriage of such cargoes on inland and coastal voyages.

- a.** Whether there is a need to add ammonium nitrate and ammonium nitrate fertilizers to the CDC list is discussed in the following report. Presently there is no need to distinguish between inland and coastal voyages related to ammonium nitrate and ammonium nitrate fertilizers.
- 5.** Prepare a report outlining TSAC's findings and recommendations to the Coast Guard.
  - a.** Please see the following report outlining TSAC's recommendations to the Coast Guard.

## Updated AN Workgroup Minutes Based on Teleconference of Tues., Dec. 9, 2003

### Questions for TSAC/CTAC Working Group on Ammonium Nitrate

- What physical or operational characteristics of barges (if any) might serve to alleviate – or, conversely, exacerbate – the destructive potential of AN as demonstrated in the ONI and ATF presentations? Include hull/covers/etc.  
**Assigned: Rex Woodward, Paul Book**

*All inland carriers of AN use covered barges. These barges have either steel or fiberglass lift or roll-top covers and are typical of covered barges used in the inland barge industry. The cargo is carried in the hopper of the barge, which serves as an independent storage area within the barge separated from the outer hull by voids, thus giving it something of a double-skin effect. Conversations with several marine surveyors and engineers suggest that there is not much that could be done to alter the physical design of the barge that would exacerbate the destructive potential of AN. Barges normally load to 1500 tons. 90% of these covered barges have “doors” on top of covers that cannot be locked and allow entry/access to the product. Using a hydraulic jack, you can roll the cover back to gain access. Presently in the dry cargo industry, inspection procedures are not standard practice for seals, but rather for integrity of the hull/barge.*

- About how much AN is moved in the U.S. each year by water and in what form?  
**Assigned: Paul Book**

*Looking at the number of companies that move AN, 28 companies were identified on the inland river system. Based on information provided by the U.S. Army Corps of Engineers' Waterborne Commerce Statistics Center and industry sources. (Thus far, we have not identified any carriers who move AN in the domestic coastal barge trade, but we have raised the question with knowledgeable coastal carriers and will forward any additional information we receive from them to the group ASAP.) The 28 companies are shown in the attachment and include barge and towing vessel operators and fleet operators. Of these companies, we estimate that 19 are not currently subject to the vessel security plan regulations because they do not operate tank barges. However, we believe that the number of affected companies may be much greater than these numbers suggest because many fleeting facilities that handle dry cargo barges would be subject to the facility security plan regulations if AN were listed as a CDC.*

November 20, 2003

Ammonium Nitrate Carriers and Fleeters  
Prepared by Doug Scheffler

The table below gives the fleet size of the carriers of ammonium nitrate identified by Lynn Muench and Rex Woodward. The data are from the 2001 edition of the "Waterborne Transportation Lines of the United States", U.S. Army Corps of Engineers. Inland Marine was on the list, but it is not in the file.

| Company Name                      | Tugboat/<br>Towboat | Total<br>Barges | Tank<br>Barges | Dry<br>Covered<br>Barges |
|-----------------------------------|---------------------|-----------------|----------------|--------------------------|
| ALTER BARGE LINE, INC.            | 15                  | 508             | 0              | 366                      |
| AMERICAN COMMERCIAL LINES         | 144                 | 4,803           | 483            | 3,856                    |
| AMERICAN RIVER TRANSPORTATION CO. | 55                  | 2,209           | 87             | 2,065                    |
| B&H TOWING, INC.                  | 2                   | 0               | 0              | 0                        |
| CAMPBELL TRANSPORTATION CO.       | 35                  | 444             | 0              | 10                       |
| CANAL BARGE COMPANY, INC.         | 17                  | 538             | 109            | 70                       |
| CARGILL MARINE & TERMINAL, INC.   | 3                   | 718             | 6              | 655                      |
| CHOCTAW TRANSPORTATION CO., INC.  | 8                   | 29              | 0              | 6                        |
| EVANSVILLE MARINE SERVICE, INC.   | 10                  | 0               | 0              | 0                        |
| INGRAM BARGE CO.                  | 61                  | 2,047           | 180            | 452                      |
| J B MARINE SERVICE, INC.          | 12                  | 0               | 0              | 0                        |
| JEFFERSON MARINE TOWING, INC.     | 6                   | 0               | 0              | 0                        |
| JOHNSON TOWING CORP.              | 3                   | 0               | 0              | 0                        |
| KIRBY INLAND MARINE, INC.         | 177                 | 770             | 765            | 4                        |
| MAGNOLIA MARINE TRANSPORT CO.     | 26                  | 75              | 72             | 0                        |
| MARQUETTE TRANSPORTATION CO.      | 25                  | 269             | 0              | 240                      |
| MCKINNEY TOWING                   | 18                  | 0               | 0              | 0                        |
| MCNATIONAL, INC. (1)              | 33                  | 13              | 7              | 0                        |
| MEMCO BARGE LINE, INC.            | 36                  | 1,668           | 0              | 727                      |
| MISSOURI BARGE LINE COMPANY       | 9                   | 58              | 0              | 53                       |
| NORTHSTAR NAVIGATION              | 6                   | 1               | 0              | 1                        |
| OWENSBORO RIVERPORT AUTHORITY (2) | 1                   | 0               | 0              | 0                        |
| RIVERWAY CO.                      | 14                  | 515             | 0              | 500                      |
| ROBERT MILLER & ASSOC.            | 0                   | 225             | 0              | 189                      |
| SOUTHERN TOWING CO.               | 13                  | 39              | 39             | 0                        |
| TENNESSEE VALLEY TOWING, INC.     | 3                   | 0               | 0              | 0                        |
| UPPER RIVER SERVICES, INC.        | 15                  | 1               | 0              | 0                        |
| WESTERN KENTUCKY NAVIGATION, INC. | 1                   | 0               | 0              | 0                        |
| <b>Total</b>                      | <b>748</b>          | <b>14,930</b>   | <b>1,748</b>   | <b>9,194</b>             |

Notes:

- (1) Parent company of Excell Marine and McGinnis Marine
- (2) Assumed this is same company as Owensboro Harbor

**Below is estimated annual AN tonnage shipments collected by Paul Book. Data provided by The Fertilizer Institute, Don Carroll (MT Maritime), Peter Vozzo (Mississippi Chemical)**

Blue water shipments:

12 month annual average **import** shipments from 1998 to 2003 is approximately 950,000 short tons. This represents imports to all of U.S. i.e. East, West and Gulf Coasts. Typical ship quantity is 30,000 tons per vessel, or approximately 31 vessels imported to U.S. a year. Ammonium nitrate %content believed to be high, 95 % to 100%.

12 month annual average **export** shipments from 1998 to 2003 is 40,000 short tons. Approximately 1 to 2 ships loading a year. Ammonium nitrate %content believed to be high, 95% to 100%.

Brown water shipments:

Approximately 600 barges loading (facility to barge, ship to barge) a year or approximately 900,000 tons. Ammonium nitrate % content is high (95% to 100%) when shipped by barge and unloaded. Blending is not done until the end user (agricultural or industrial user). Density of water borne ammonium nitrate shipments typically is high .90 grams per cubic centimeter which is agricultural grade. Industrial use density is .80 grams per cubic centimeter. The greater the density the less the detonation propagation, an automotive analogy, the greater the density the more it acts like a muffler.

Attention Jennifer and Rex:

This is ACBL's annual AN loading/discharging patterns. Bottom line, the whole inland waterway system.

Origin:

|                            |             |
|----------------------------|-------------|
| Lower Miss mile 132 to 173 | 64 loadings |
| Tennessee River mile 256   | 1           |
| Upper Miss mile 181        | 1           |
| Yazoo River mile 075       | 116         |

Destinations:

|                                  |               |
|----------------------------------|---------------|
| Arkansas River mile 000 to 446   | 45 unloadings |
| East Canal mile 15               | 10            |
| Cumberland River mile 175        | 10            |
| Lower Miss River mile 163 to 850 | 39            |
| Ohio River mile 038 to 981       | 26            |
| Upper Miss River mile 000 to 830 | 20            |
| West Canal mile 000 to 518       | 11            |
| Tennessee River mile 000 to 305  | 21            |

**Data provided by Ford West of Fertilizer Institute; all figures are in short tons.**

| Based on June to July | <u>2001/2002</u> | <u>2002/2003</u> |
|-----------------------|------------------|------------------|
| Canadian              | 552,023          | 495,783          |
| Brazil                | 175,000          | 270,000          |
| Norway                | 34,451           | 27,863           |
| Denmark               | 331,000          |                  |
| Russia                | 59,552           | 176,668          |
| Netherlands           | 152,936          | 193,833          |
| United States         | 938,098          | 1,117,221        |

- How many companies (count both barge, towing, and any coastal/bluewater companies) are involved in the movement of AN by water? Of these, how many are not currently covered by the Coast Guard's vessel security plan rules (i.e., because they carry no other CDCs, D, or O cargoes, or have towing vessels that move such barges)?

**Assigned: Rex Woodward, Jennifer Carpenter**

*24% of 27,000 dry hopper barges IRVMC recorded through voluntary tracking since April '03 and at peak in Nov. was 40 AN (20 moving/20 fleeting)—need more work to get the avg. daily number of movements. IRVMC numbers are based on each movement, not on a single barge going through the river systems. 3M tons produced in US plus 1M tons imported. 4M (2.1M used in agriculture and 1.9 in industrial applications).*

- How many additional barges and towing vessels would be subject to the vessel security plan rules if AN were added to the CDC list?

**Assigned: Rex Woodward, Jennifer Carpenter**

*Estimated maximum of 8,000-9,000 additional barges, 30-40 fleet operators, 60-80 fleet boats and 160 line haul boats could be subject to the vessel security plan rules if AN were added to the CDC list, though we caution that this estimate probably overstates the population of affected vessels since many of the companies representing both barges and towboats may already have to submit VSPs. Also, need better stats and economics involved*

- How many of these companies/barges/towing vessels could not be covered by the AWO Alternative Security Program (thus necessitating the submission of a stand-alone vessel security plan to the Coast Guard requiring agency review)?

**Assigned: Rex Woodward, Jennifer Carpenter**

*Of the 28 companies on the attachment, five (5) are not AWO members and thus not eligible to use the AWO's Alternative Security Plan Model. These companies together operate 195 covered hopper barges and 34 towboats.*

- Are there approaches other than adding AN to the CDC list that should be considered to improve the security of AN movements by barge?

**Assigned: Alice Johnson, Ron Corigliano, James Prazak, John Temperilli**

1. *List AN as a CDC but not all security provisions, e.g. security plans physically on each vessel. Would make location tracking mandatory and require fleeting areas to designate a restricted area as part of the permit (currently, AN shipments are voluntarily being tracked and reported although it is not a CDC).*
2. *Amend the vessel special permit for AN under 46 CFR 148.01-9 (safety requirements). Recommended by Fertilizer Institute is to add security requirements to special permit (amend RNA requirements).*
3. *Classify bulk AN and AN fertilizers classified as 5.1 Oxidizers as a CDC with all security requirements.*
4. *No further security requirements (status quo) for AN as existing requirements in the permit process 46 CFR 148.01-9 and RSPA requirements 49 CFR 146.415. Work group's opinion is this not viable option.*
5. *Do not permit shipment of AN via vessel (Canadian plan). Work group's opinion is this not viable option.*

*Options 4 and 5 were deemed as unacceptable and no further discussion of those was needed. Of the remaining three options, the majority of the work group recommended Option 1 as the most viable, followed by Option 2, and Option 3 as the least viable.*

- If AN were to be added to the CDC list, what kind of industry outreach would be necessary to ensure that operators were prepared to comply with the newly applicable regulations?

**Assigned: Alice Johnson, Ron Corigliano, James Prazak, John Temperilli**

*A major change on the dry cargo industry which would require outreach for fleeting facilities and vessel owner/operators. Industry groups, e.g. AWO, Fertilizer Institute, USCG Web Site, COTP, and Army Corp.*

- What other factors should the Coast Guard be aware of as it considers whether to add AN to the CDC list?

**Assigned: Alice Johnson, Ron Corigliano, James Prazak, John Temperilli**

**1. *Classify bulk AN and AN fertilizers classified as 5.1 Oxidizers as a CDC with all security requirements:***

- Economic hardships (training, drills, exercise, plans, etc.);*
- Simplest solution to promulgate, institute and enforce secure AN shipments;*
- Additional security for AN shipments;*
- Recognition of the threat potential;*
- Listing allows for lesser degree for interpretations and inconsistencies, and allows for public comment.*

**2. *Amend the vessel special permit for AN under 46 CFR 148.01-9 (safety requirements). Recommended by Fertilizer Institute is to add security requirements to special permit (amend R&A requirements). Making AN a CDC would remove the COTP special requirements (consistency from port to port). However, that would take the current chain of command away from the COTP.***

- AN facilities currently are covered by security requirements. There are additional requirements in addition to part 105 for AN facilities in that they must post a guard if a loaded barge is to be moored overnight;*
- Lesser economic impact;*
- More difficult to promulgate, institute and enforce secure AN Shipments (who is held accountable for the vessel security at all times, i.e. fleeting);*
- Additional security for AN shipments but not as encompassing as if it was a CDC, e.g. vulnerability assessment;*
- Recognition of the threat potential;*
- Permit process can allow for greater degree of interpretations, inconsistencies, and no public comment.*

3. *AN be listed as CDC but not all security provisions, e.g. security plans physically on each vessel. Would make location tracking mandatory and require fleeting areas to designate a restricted area as part of the permit (currently, AN shipments are voluntarily being tracked and reported although it is not a CDC).*
  - ❑ *May act as an alternate security plan for AN;*
  - ❑ *Economic hardships (training, drills, exercise, plans, etc.) but not as great as the full requirements of a CDC;*
  - ❑ *Not the simplest solution as with CDC to promulgate, institute and enforce secure AN shipments but can be managed;*
  - ❑ *Additional security for AN shipments;*
  - ❑ *Recognition of the threat potential;*
  - ❑ *Listing allows for lesser degree for interpretations and inconsistencies, and allows for public comment.*
4. *If bulk barge shipments were not permitted (Canadian requirements), alternate methods of shipping AN is that for 500 barges would require 31,500 cargo tanks or 7,500 railcar for the same amount of AN. Work group feels that this may be detrimental to safety, security and economics.*
5. *Non-bulk AN (packaged) is on the CDC list. Not listing bulk AN would not be consistent.*
6. *Incorporate Part I, subchapter N to 104.105 Applicability (a)(8) Barge subject to 46 CFR chapter I, subchapter D or O. This would make consistency between facility and vessel security.*

**[Note: Suggested that Don Carroll and John Salvesen could assist Paul Book on blue water concerns with AN.**

## **Follow-up Discussions to Further Review of the Vessel and Facility Requirements**

On September 9<sup>th</sup>, a conference call was held to conduct further follow-up discussions to further review the analysis of the 3 options selected by the working group. Members attending included:

### **Vessel Regulations (Part 104) Report**

#### **104.115 – Compliance dates:**

Because this is a new offering, it was suggested that the deadlines be delayed by a year. LCDR Teubner indicated that due to the MTSA requirements, it might not be possible to delay for a full year. The Coast Guard will take this suggestion under advisement, and will have to further review the situation.

#### **104.230 – Drill and Exercise Requirements:**

Recommend that the drill requirements be extended from once per 3 months to once every 6 months. This is due to the number of smaller companies that will be impacted, and the fact that they only carry a limited amount of AN. LCDR Teubner pointed out that the regulations specify a performance standard, and it might be worthwhile to consult the AWO to determine how they have integrated the drills into their Alternative Security Program. For example, if unmanned vessels such as barges with like characteristics are grouped under one VSO, it is possible to rotate the drill requirements and only conduct a single drill each set time period (once per quarter in the regulations, or once every 6 months as suggested by the group). In addition, towing vessels involved in fleeting areas are already exempted from Part 104 [see 104.105(a)(11)(i) through (iv). Also see the preamble to the final rules (USCG-2003-14749), page 60486, 3<sup>rd</sup> column for further explanation], so they would not be required to have a security plan or conduct the drills/exercises. Ultimately, the vessels would be linked to a bigger plan, most likely the fleet plan (i.e. if a fleeting vessel is tied to the fleeting facility, the security plan for the fleeting facility would incorporate any security issues related to the vessel).

#### **104.120 - Documentation:**

There are no existing documentation tubes or mailboxes on the bulk of the hopper barges. As such, it will be very difficult to place a copy of the vessel security plan on every vessel in the fleet, when only a small percentage of the vessels might carry the cargo. One possible solution is to only require that the plan be on the barge while it is carrying AN. Because of the special permit requirements, vessel owners are already doing this by placing the permit on the vessel prior to loading AN, so this would simply be another document. Another option would be to segregate facilities and place the plan on the barges they will use on AN, but due to logistical reasons, it is impractical to rely on this option.

## **Facility Regulations (Part 105) Report**

### **105.115 – Compliance dates:**

A similar statement applies to facilities as did for vessels.

All other provisions would remain applicable. It is recommended that the industry beginning working together ASAP to develop and ASP for the industry.

Based on this review, Option 1 essentially turns out to be Option 3 – identifying AN as a CDC.

After further discussion on the use of special permits, the Coast Guard is not sure whether they could even incorporate security requirements into the permit program. The Coast Guard has agreed to research this idea.

### **Other options – Subchapter N inclusion:**

The Coast Guard could choose to add Subchapter N to the Applicability sections in Part 101, Part 104 and Part 105, which would set a lower threshold and therefore capture even more cargoes, some of which are not particularly hazardous.

### **Final Recommendation:**

Based on the information that the group has available today, the group narrowed the recommendation to 2 options – defining AN as a CDC, or utilizing the special permit to stipulate security requirements. Because of questions remaining about the special permit program, the use of the special permit could be a viable option, depending on what comes out of the further review by the Coast Guard.

The key effort that needs to take place as soon as possible is outreach to the vessel owner/operators and the fleeting facilities. Options include working groups with the Coast Guard, the Corps of Engineers, AWO, maritime publications, CTAC's outreach group, The Fertilizer Institute, and any number of other organizations.

Rex will follow-up with AWO to see if they have any further input into the recommendation.

**TOWING SAFETY ADVISORY COMMITTEE (TSAC)**  
**TASK STATEMENT**  
**Task 03-03**

**I. TASK TITLE:**

Addition of ammonium nitrate and ammonium nitrate fertilizers that are classified as oxidizers to the Coast Guard Certain Dangerous Cargo (CDC) definition.

**II BACKGROUND:**

In response to the events of September 11, 2001, the Coast Guard partnered with industry and engaged the public in an effort to develop maritime security regulations that would provide maximum protection to our ports, waterfront facilities, and vessels transiting our waters while resulting in minimal disruption to the public and our commerce. As part of this effort, the Coast Guard's Hazardous Materials Standards Division (G-MSO-3) was asked to redefine Certain Dangerous Cargoes (CDC). We were asked to capture just those "worst of the worst" cargoes that are thought to pose the greatest risk to populations that may be exposed to them as a result of a terrorist incident. The CDC definition as it currently exists in Title 33 Code of Federal Regulations (CFR), Part 160.203 does not include packaged "inhalation hazard" poisonous gas and liquid materials that are listed in the Department of Transportation (DOT) Hazardous Materials Table (HMT) found in 49 CFR 172.101, yet does include nearly 500 bulk liquid cargoes that are listed in Table 1 of 46 CFR 153. The absence of potentially deadly packaged materials and the inclusion of hundreds of bulk liquid cargoes that are not plausible contributors in a Weapon of Mass Destruction (WMD) scenario make the current CDC definition inadequate for use within the Coast Guard's new security regulatory scheme.

The Coast Guard recently published a revised CDC definition in the Notification of Arrival in U.S. Ports Federal Register Notice published in Vol. 68, No. 40, on February 28, 2003. This revised definition contains eight line items. The first six items apply only to packaged cargoes that are listed in the HMT. The last two items apply only to bulk liquid and liquefied gas cargoes that are listed in 46 CFR Subchapter O. By definition, all cargoes listed in the HMT and 46 CFR Subchapter O are capable of posing an unreasonable risk to health, safety, and property when transported in commerce and, therefore, are subject to some degree of regulation. However, most of these cargoes are not capable of causing death, injury, and damage of the type associated with WMD. We believe that those cargoes captured by the revised CDC definition pose the greatest risk to U.S. populations.

Bulk solid cargoes were considered, but not included in the revised CDC definition. The revised CDC definition was intended to capture only those "stand-alone" materials that pose the greatest risk. For example, ammonium nitrate and ammonium nitrate fertilizers that are allowed to be transported in bulk are classified either as an "oxidizer" (Division 5.1) or as a lower hazard known as "miscellaneous hazardous material" (Class 9) in the HMT. 49 CFR 173.127 defines an oxidizer as, "a material that may, generally by yielding oxygen, cause or enhance the combustion of other

materials.” Similarly, the National Fire Protection Association (NFPA) defines oxidizing material in their NFPA 495 Explosive Material Code as, “any solid or liquid that readily yields oxygen or other oxidizing gas or that readily reacts to oxidize combustible material.” In general, an oxidizer is a material that, usually by providing oxygen, helps another material burn. Thus, based on DOT classifications of ammonium nitrate and ammonium nitrate fertilizers as oxidizers or miscellaneous hazardous materials, these cargoes were not captured by the revised CDC definition. However, it should be noted that ammonium nitrate formulations, either dry or liquid, that meet the criteria for classification as an explosive material (Class 1), are captured in the revised CDC definition. These materials are permitted to be transported in packaged form only – not in bulk by vessel.

Much of the general literature that is available on ammonium nitrate leads one to believe that dry ammonium nitrate is capable of detonation only if properly mixed in specific proportions with a carbon (fuel) source. In fact, pure ammonium nitrate is classified as a Division 5.1 oxidizer in the DOT HMT because, in addition to demonstrating its ability to increase the burning rate/intensity of a combustible substance when the two are mixed, it does not meet recognized international Class 1 explosives test criteria that were developed by the UN and incorporated into the DOT Regulations. Typically, with the addition of a small amount of combustible material, ammonium nitrate, that is otherwise pure, can be sensitized to the point where it must be reclassified as an explosive material. A large amount of Class 1 ammonium nitrate in packaged form is transported each year for use in the production of mining products and fireworks.

The Bureau of Alcohol, Tobacco, and Firearms (ATF) and the Office of Naval Intelligence (ONI) have recently shown through independent research that pure, dry ammonium nitrate of Class 5.1 can be detonated, without the addition of a combustible material, if initiated with a sufficient amount of high explosive material. With hundreds of thousands of short tons of ammonium nitrate and ammonium nitrate fertilizer moving on U.S. waterways each year, the Coast Guard is concerned about its potential for misuse if not properly safeguarded.

### **III. PROBLEM STATEMENT:**

The Coast Guard is considering adding dry bulk ammonium nitrate and ammonium nitrate fertilizers that are classified as oxidizers to its CDC definition. The Coast Guard recently published six interim rules to promulgate maritime security requirements mandated by the Maritime Transportation Security Act of 2002. Within these rules, CDCs are subject to restrictions and requirements that are above and beyond those that apply to all other regulated cargoes.

### **IV. TASK:**

1. Establish a working group to advise the Coast Guard on the anticipated impact within the towing industry should dry bulk ammonium nitrate and ammonium nitrate fertilizers that are classified as oxidizers be included in the definition of Certain Dangerous Cargoes.
2. Review the research conducted by the ATF and ONI to determine its relevance to barge and towing industry operations.

3. Estimate the quantity of pure dry ammonium nitrate of Class 5.1 (70% or more by content) carried annually by barge on the U.S. inland and coastal waterways. (Data sources: U.S. Army Corps of Engineers, barge operators.)
4. Determine whether the need exists to add dry bulk ammonium nitrate and ammonium nitrate fertilizers classified as oxidizers to the CDC definition, and if so, whether there is a need to distinguish between the carriage of such cargoes on inland and coastal voyages.
5. Prepare a report outlining TSAC's findings and recommendations to the Coast Guard.

**V. ESTIMATED TIME TO COMPLETE TASK:**

Provide recommendations to the Coast Guard as soon as possible.

**VI. COAST GUARD TECHNICAL REPRESENTATIVES:**

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