



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

APR 12 2017

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

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OFFICE OF LAND AND  
EMERGENCY MANAGEMENT

**MEMORANDUM**

**SUBJECT:** Transmittal of Meeting Minutes from the January 10-12, 2017, Hazardous Waste Electronic Manifest System (e-Manifest) Advisory Board Meeting

**FROM:** Fred Jenkins, Designated Federal Officer of the e-Manifest Advisory Board  
U.S. Environmental Protection Agency *Fred Jenkins*

**THRU:** Barnes Johnson, Director *Barnes Johnson for*  
Office of Resource Conservation and Recovery

**TO:** Nigel Simon, Acting Principal Deputy Assistant Administrator  
Office of Land and Emergency Management

Please find attached the meeting minutes from the January 10-12, 2017, e-Manifest Advisory Board public meeting held in Arlington, VA. The meeting theme was "System Launch: Day 1 e-Manifest." The purpose of the meeting was to advise the Agency on e-Manifest system development matters including critical functionality needed on Day 1 of e-Manifest, and mechanisms that may encourage early adoption of e-Manifest once the system becomes available to the manifest user community.

CC: Steve Fine

David Bloom

Enclosure

**Hazardous Waste Electronic Manifest System**  
**(e-Manifest) Advisory Board Minutes No. 2017-01**

**e-Manifest Advisory Board to Address**  
***“System Launch: Day 1 e-Manifest”***

**January 10-12, 2017**  
**e-Manifest Advisory Board Meeting Held at the**  
**Crystal City Marriott at Reagan National Airport**  
**1999 Jefferson Davis Hwy**  
**Arlington, VA**

The Hazardous Waste Electronic Manifest System (e-Manifest) Advisory Board is established in accordance with the provisions of the Hazardous Waste Electronic Manifest Establishment (e-Manifest) Act, 42 USC § 6939g, and the Federal Advisory Committee Act (FACA), 5 U.S.C. App.2. The Board is in the public interest and supports the Environmental Protection Agency (EPA) in performing its duties and responsibilities. The e-Manifest Advisory Board provides independent, peer review and advice to the Agency on operational matters related to the e-Manifest System. This meeting's minutes represent the views and recommendations of the e-Manifest Advisory Board and do not necessarily represent the views and policies of the EPA or of other agencies in the Executive Branch of the federal government. Mention of trade names or commercial products does not constitute an endorsement or recommendation for use. The meeting minutes do not create or confer legal rights or impose any legally binding requirements on the EPA or any party.

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## NOTICE

The e-Manifest Advisory Board is a federal advisory committee operating in accordance with the Federal Advisory Committee Act and established under the provisions of the Hazardous Waste Electronic Manifest System Establishment Act. The e-Manifest Advisory Board provides independent advice to the Agency on operational matters related to e-Manifest. The Board is structured to provide balanced expertise and advice on matters facing the Agency relating to the implementation and function of e-Manifest. The Board's meeting minutes have been written as part of the activities of the e-Manifest Advisory Board. In preparing the meeting minutes, the e-Manifest Advisory Board carefully considered all information provided and presented by EPA, as well as information presented in public comment.

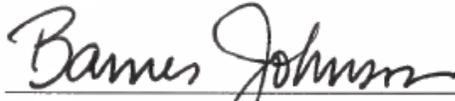
The January 10-12, 2017, e-Manifest Advisory Board meeting was held to consider and review issues associated with "*System Launch: Day 1 e-Manifest.*" The meeting minutes were certified by Barnes Johnson, the Delegated e-Manifest Advisory Board Chair, and Fred Jenkins, Ph.D., the e-Manifest Advisory Board Designated Federal Officer (DFO), on April 6, 2017. The minutes are publicly available on the e-Manifest website (<https://www.epa.gov/hwgenerators/hazardous-waste-electronic-manifest-system-e-manifest>) under the heading of "Meetings" and in the public e-docket, Docket No. EPA-HQ-OLEM-2016-0695, accessible through the docket portal: <http://www.regulations.gov>. Further information about e-Manifest Advisory Board meeting reports and activities can be obtained from its website at: <https://www.epa.gov/hwgenerators/hazardous-waste-electronic-manifest-system-e-manifest>. Interested persons are invited to contact Fred Jenkins, Ph.D., e-Manifest Advisory Board, DFO, via e-mail at [jenkins.fred@epa.gov](mailto:jenkins.fred@epa.gov).

**(e-Manifest) Advisory Board Minutes No. 2017-01**

**e-Manifest Advisory Board to Address  
“System Launch: Day 1 e-Manifest”**

**January 10-12, 2017  
e-Manifest Advisory Board Meeting Held at the  
Crystal City Marriott at Reagan National Airport  
1999 Jefferson Davis Hwy  
Arlington, VA**

**Barnes Johnson  
Director of the Office  
of Resource Conservation and Recovery  
and Delegated Chair  
e-Manifest Advisory Board**



**Date:** APR 06 2017

**Fred Jenkins, Jr., Ph.D.  
Designated Federal Official  
e-Manifest Advisory Board**



**Date:** APR 6 2017

## **e-MANIFEST ADVISORY BOARD ROSTER**

### **e-Manifest Advisory Board (Delegated) Chair**

#### **Barnes Johnson**

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### **e-Manifest Advisory Board Members**

#### **Thomas Baker**

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Veolia North America  
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#### **Joshua Burman**

Senior Environmental Specialist  
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Minnesota Pollution Control Agency  
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#### **Michael Hurley**

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#### **Robert Klopp**

Chief Information Officer  
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#### **Raj Paul**

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#### **John Ridgway**

Information Management & Communications Section Manager

Hazardous Waste and Toxics Reduction Program  
Washington State Department of Ecology  
Olympia, WA

**Cynthia Walczak**  
Environmental Project Manager  
MPS Group  
Farmington Hills, MI

**Justin Wilson**  
Senior Manager II-EH&S Compliance  
Wal-Mart Stores Inc.  
Bentonville, AR

## **INTRODUCTION**

On January 10-12, 2017, the e-Manifest Advisory Board met for its first public meeting in Arlington, VA to consider and review “*System Launch: Day 1 e-Manifest.*” The purpose of the meeting was to advise the Agency on e-Manifest system development matters, such as critical functionality needed on Day 1 of e-Manifest, and mechanisms that may encourage early adoption of e-Manifest once e-Manifest becomes available to the manifest user community. U.S. EPA presentations were provided during the meeting by the following (listed in order of presentation):

*Welcome and Opening Remarks* – Mathy Stanislaus, Assistant Administrator of OLEM

*e-Manifest Background* – Richard LaShier, Chair of the e-Manifest Fee Rule Workgroup, OLEM, Office of Resource Conservation and Recovery(ORCR)

*e-Manifest System Summary* – Stephen Donnelly, e-Manifest Program Manager, OLEM, ORCR

*User Fee Program and Related Issues* – Richard LaShier, Chair of the e-Manifest Fee Rule Workgroup, OLEM, ORCR

### **PUBLIC COMMENTERS** (listed alphabetically)

*Oral public comments were provided by:*

Laurence Goodman, Sr. Environmental Specialist, Vopak Terminal Deer Park

Paul Johnson, Director of Environmental Affairs, Kinsbursky Brothers Inc.

Shaun Nieves, Director of IT, Kinsbursky Brothers Inc.

Catherine McCord, VP Environmental Health and Safety, Heritage-Crystal Clean, LLC

James Williams, VP Governmental Affairs, Environmental Technology Council

*Written public comments were provided by:*

An anonymous public commenter

Larry Fura, Director of Technology, WTS, Inc.

Timothy Rice, Battalion Chief, Fire Department New York City, Hazardous Materials Operations

## OVERALL SUMMARY OF e-MANIFEST ADVISORY BOARD RECOMMENDATIONS

The e-Manifest Advisory Board was specifically charged for this public meeting to advise the Agency on the following issues:

- Ways to enhance outreach and engagement of the e-Manifest user community in order to maximize user buy-in and utilization of e-Manifest.
- Processes for making data corrections in e-Manifest
- The appropriate level of helpdesk Information Technology (IT) support during the initial launch of e-Manifest
- Proposed e-Manifest user fee payment methods
- EPA's hybrid manifest proposal and phased-in electronic manifesting

The following provides a brief synopsis of the Board's recommendations to the Agency regarding each of these issues.

### *Enhancing engagement and outreach to maximize user buy-in*

The Board emphasized the importance of effective outreach and engagement of the e-Manifest system user community as a means to ensure the successful adoption of the system. They identified several hurdles towards accomplishing this goal, and they advised the Agency on addressing each of them. These hurdles included launching a system that: 1) will not confuse users, 2) will engender a positive "first impression," 3) will be scrupulously vetted and broadly tested among the stakeholder community, and 4) will not be impeded by the complexities associated with the federal "Cross-Media Electronic Reporting Rule (CROMERR)."

Further, in regards to effective engagement of the e-Manifest user community, the Board recommended that the Agency collaborate with state hazardous waste management agencies. They advised that these state entities will be key in helping the Agency do effective outreach and engagement especially to the hazardous waste generator community. Also, the Board noted that it is critically important that the Agency do a better job of communicating to the user community about the economic benefits of e-Manifest. They recommended that the Agency conduct an e-Manifest marketing initiative that would produce marketing and education tools such as YouTube videos that would serve as an effective communication aid.

### *Addressing e-Manifest data corrections*

The Board noted that manifest transactions often require data corrections. Thus, they deemed it critically important for the Agency to implement a set of efficient and standardized procedures for addressing e-Manifest data corrections. They recommended that such procedures should identify: 1) the entity(ies) responsible for initiating a data correction, 2) the correction, 3) the date of the correction, 4) which data elements are required to be corrected, 5) required verification steps, and 6) the process to be followed for the submission of data corrections. The Board emphasized that such standardized procedures are necessary to avoid manifest data integrity problems.

### *Level of helpdesk support upon initial launch of e-Manifest*

Most of the Board believed that during the initial launch phase of e-Manifest the helpdesk support should be chiefly personal instead of automated. They asserted this is based on the user community's needs and demands for timely service at a low user fee cost that will make the user's experience with the system easier. They noted that if the user community is immediately frustrated with difficulties from using e-Manifest, they will revert to using the paper manifest system that they are already familiar with. Thus, to avoid such a reversion to paper manifests, the Board stressed how important it is for the Agency to ensure that the helpdesk's support is personal, responsive, and proficiently able to quickly resolve problems that users may experience on the first call.

### *Proposed e-Manifest user fee payment methods*

The Board noted that industry generally supports a monthly invoicing approach in which receiving facilities are issued invoices on a per month basis for the prior month's manifest submittals. The Board considered, but did not support, the option of a subscription fee model based on count ranges of individual manifests received by a receiving facility in the previous year to establish Year 1 fees. In regards to options that the Board opposed, they particularly thought that the "advanced fixed" payment option was unreasonable given the significant number of expected manifest actions and large variability in manifest submittal activities.

### *EPA's hybrid manifest proposal and phase-in of electronic manifesting*

The Board emphasized the need for e-Manifest to be designed so that it truly benefits the user (saves money or time, or improves compliance efforts). Such a beneficial system will draw users to adopt it. The Board was skeptical about the hybrid approach being a long-term viable alternative. The hybrid approach would allow a combination of paper and electronic reporting for a single manifest. They suggested that it would likely compete with the full adoption of the e-Manifest system. The Board encouraged the Agency to continue partnering with the waste industry service providers, many of whom have their own electronic manifest systems. Such partnering will enable the Agency to ensure that e-Manifest is being designed in a way which would complement existing systems and avoid additional implementation burdens for industry.

## **DETAILED BOARD DELIBERATIONS AND RESPONSE TO CHARGE QUESTIONS**

### **Charge 1. Outreach and engagement of the e-Manifest user community in order to maximize user buy-in and utilization of e-Manifest**

#### ***1A. What hurdles do you foresee in getting user buy-in?***

The Board identified the following hurdles in getting user buy-in of e-Manifest and advised the Agency on how to address each of them. The hurdles identified included:

- Preventing potential confusion about e-Manifest among the stakeholder community when it is initially launched.
- Ensuring that the user community has a favorable “first impression” of the initial rollout/implementation of e-Manifest.
- Delivering a system that has been thoroughly vetted and broadly tested among the stakeholder community.
- Overcoming the complexities and apparent impediments associated with the requirements of the federal “Cross-Media Electronic Reporting Rule (CROMERR).”

#### ***Addressing potential confusion upon the initial roll out of e-Manifest***

The nationwide hazardous waste community is very large in number and extremely diverse in type, and comprehension of the hazardous waste regulations will require significant outreach from the Agency regarding e-Manifest in preparation for its initial implementation. It will be imperative for the Agency to take appropriate measures to avoid confusion among the stakeholder community about e-Manifest. In order to facilitate this transition and to avoid confusion among the stakeholders, the Board recommended that the Agency coordinate with the states to assist in outreach and education efforts about e-Manifest. They also advised the Agency to consider adding elements of e-Manifest implementation strategies into future Environmental Performance Partnership Agreements (PPAs). These agreements are routine contracts/grants established between the Agency’s regional offices and the states within each region. This will help set, clarify, and coordinate the roles that the Agency and its regions will have in helping to ensure the successful implementation of e-Manifest. This would be expected to include formulating a plan for how the regions will coordinate with state officials within their respective regions. In regards to technical challenges involving the states, the Board noted that among the states there are unique manifest systems with their own idiosyncrasies to overcome when linking to a common/national database system.

#### ***Achieving a good “first impression” for e-Manifest***

Ensuring that the user community will have a positive first impression of e-Manifest will be essential towards convincing them to readily adopt the system. The Board noted that in order to accomplish this, the Agency will need to ensure that the user interface is not initially perceived as too complicated to use. The user interface must be extremely intuitive and easy to navigate, especially for first time e-Manifest users. Failure to ensure this will likely discourage the user community from adopting the system. The Board noted that it will be even more challenging to

regain their acceptance of e-Manifest if they are discouraged and decide to revert to the already familiar paper system. The Board recommended the following measures to foster a good first impression of e-Manifest among the user community once it is initially implemented:

- Easy to follow and readily accessible instructions embedded within the user interface.
- Immediate helpdesk accessibility.
- A system built based on ample testing and feedback from the user community.

#### *Getting ample input from the user community*

The Board emphasized the importance of developing a system with ample user feedback via regular user testing sessions of the system. Specifically, they recommended that the Agency conduct testing by users in the regulated community through two parallel, simultaneous approaches, to best capture the varying needs of different regulated parties that will eventually use the e-Manifest system: informal distant testing via remote access of volunteer user generators, transporters, and designated facilities of as wide a variety of regulatory and online familiarity as can be interested by the Agency; and formal in person, observed user testing sessions with a group of volunteer users. This testing would provide very useful information to help the Agency: 1) understand the users' experiences with the system, and 2) gain feedback on how to enhance the system based on the information gathered. Essentially the system should be developed based on a customer/user first orientation. Such user testing efforts will enable the Agency to accomplish this goal.

Since the user community consists of a vast array of stakeholders, the Board recommended that the Agency not limit itself to input provided only by bigger companies, but consider also the input of conditionally exempt small quantity generators (CESQGs), generators of state-only regulated waste, generators of mixed waste, etc.

The Board also suggested that the Agency consider prioritizing the input of various users, i.e., soliciting and incorporating the input of one user group first (e.g., TSDFs), and once that group's concerns had been fully addressed, proceeding to solicit and incorporate the input of the next group (e.g., Generators), then the next (e.g., State Agencies), etc. They advised the Agency to build and launch a minimally viable e-Manifest product primarily based upon this feedback. After the initial launch of the e-Manifest minimum viable product, the Board recommended that the Agency pursue further advancements of the e-Manifest system based upon continuous and expanded stakeholder outreach and feedback.

#### *Concerns associated with CROMERR requirements*

The Board also emphasized complications with the federal "Cross-Media Electronic Reporting Rule (CROMERR). The rule requires users to follow complicated and burdensome reporting procedures. The procedures involve challenges associate with password expirations, log-on delay time, updating secret questions as a double verification steps. Additionally, users are subjected to other legal obligations associated with CROMERR. Applying these rules to e-manifest users poses challenges because of 1) the high turnover rates among staff personnel the hazardous waste handling industry, 2) the relative lack of technological sophistication among some of those responsible for signing hazardous waste manifests, and 3) the ability of CDX to

manage hundreds of thousands of additional users. If all CROMERR procedures were not followed, the user's manifest(s) would not be allowed into the system. This issue will create significant technical challenges (i.e.) for the user community and will likely result in a lower adoption rate of the electronic manifest. This same burden is not conferred on users of the existing paper process. To help address the concerns about CROMERR, the Board suggested that the Agency test a simpler user sign-in process that won't discourage people from using e-Manifest.

The Board also recommended that the Agency engage with the transportation sector including the federal Department of Transportation (DOT), and their state counterparts.

***1B. What outreach efforts have we overlooked? What can we do better?***

The Board reiterated the importance of Agency coordination with state hazardous waste management agencies, especially to assist with stakeholder outreach. In nearly all cases, the states regulate these receiving facilities; likewise, the states regulate the vast majority of generators of hazardous waste. The states are in a key position to help with stakeholder outreach, which also implies states will require full clarity of the e-Manifest system and its implications before deployment.

The Board believed that there is a general sense among the generator community that they are not well informed about e-Manifest. The Board noted state governments often receive inquiries from the generator community such as: What is it going to look like?, How is this going to work?, How can we use it?, How are we going to put data in?, How are we going to correct data?, and How are we going to view data?

In partnering with states to reach to their respective generators, the Board advised the Agency to provide states access to a working prototype of e-Manifest that states in turn could share with generators for testing and to enhance ease of use. They also advised that the Agency have an easy-to-find website with ample opportunities to view, test, and practice with the current e-Manifest system. The Board specifically advised that the system also invites test user comments - directly at the point (view/data field/instruction, etc.) of a user's experience with the system. The Board noted that state collaboration will be especially important, particularly since states have a vested interest in the success of e-Manifest.

The Board advised that the Agency should inform the generator community about how e-Manifest will impact that community. For instance, being better informed about the initial associated user fee costs of e-Manifest, will help the affected industry plan and prepare for these cost. The Board said that it is critical for the Agency to clearly show compelling benefits to the generator community in terms of cost savings, time efficiencies or improved compliance. For instance, the Board commented that the proposed hybrid manifest model upon preliminary review did not appear to demonstrate any benefit to generators. Consequently, they noted that generators would be reluctant to adopt this proposed hybrid approach.

The Board advised the Agency to develop an e-Manifest marketing initiative. The purpose would be to improve understanding of the e-Manifest customer needs and effectively communicate and promote e-Manifest's economic benefits. Suggestions included a YouTube video, or a video

channel with multiple short individual videos, each focusing on a single aspect or feature of the system, as a means to advertise and inform the stakeholder community about e-Manifest and how it works. An effective marketing initiative will generate more stakeholder interest and involvement to advance the system. The Board reiterated the importance of ample opportunities for users to test the system and provide feedback on a regular basis (as often as in two-week cycles) in order to ensure that the system is initially user friendly and that it continually improves. Such efforts of engagement and outreach will help foster a sense of ownership of e-Manifest among the stakeholder community. This will lead to faster user acceptance and success of the system. The Board also noted that regular webinars providing updates about e-Manifest would serve as an additional public education/outreach tool.

## **Charge 2. Corrections process for manifest data already entered in system**

***2A. Can the Board opine on how much prescriptive detail is necessary to prescribe a structured and orderly process for executing data corrections, while affording interested parties (waste handlers on manifest and regulators) the opportunity to participate adequately?***

This is a critical issue to e-Manifest users and regulators because it is common for manifest transactions to require data revisions. Manifest data correction and reconciliation procedures must be clear and verifiable. This is critical for the waste generators, the haulers, the receiving facilities, and regulators.

The Board recommended that these procedures should address the following: 1) identification of the entity responsible to initiate a data correction, 2) what, exactly was changed, 3) date of correction, 4) which data elements are required to be corrected, 5) required verification steps, and 6) the process to be followed for the submission of data corrections. Without such standardized procedures, inconsistencies could lead to integrity concerns and problems. The e-Manifest correction/validation process must be efficient and not viewed as an administrative burden compared to the paper manifest process. As for who should make data corrections, several members of the Board recommended that data corrections should be coordinated solely between generators and their respective receiving facilities, however at least one Board member strongly disagreed with this limitation unless modified as described below.

The Board also noted that currently there exists a generally effective working process between the waste generators and the receiving facilities for identifying and resolving paper manifest errors regarding waste identification and volume. This communication link between these parties has proven to be an effective means of managing manifest data revisions and it is expected that this process will continue after the e-Manifest is implemented. However, correction of other critical information errors, such as EPA ID#s, correct generator name, and physical address, are often not managed by generators or receiving facilities in the existing paper manifest system.

The Board concurred that the Agency should issue instructions to the user community on how to manage manifest revisions in the new e-Manifest world. The Board added such instructions

should not be in the form of a new regulation. The Agency should publish user guidance on its webpage(s) and possibly within the reporting tool itself, to assist and instruct e-Manifest users on how to make corrections.

Lastly, the Board noted that data corrections should be made promptly (as soon as practicable) by the responsible party after becoming aware of a data error.

***2B. Can the Board advise on how the process, notices to parties, and response deadlines should be structured if EPA determines to eliminate the 90-day window for finalizing all data corrections?***

The current process for addressing paper manifest corrections is that once any waste handler (generator, broker, transporter or TSDf) identifies an error in the manifest, they communicate the nature to other waste handlers who possess copies of the errant manifest. When all parties agree that a change needs to be made to the manifest to ensure that the manifest is accurate, all parties will change their respective copy (or copies) in the same manner so as to ensure all parties have an accurate copy in their records. Waste handlers generally maintain records (e.g., email correspondence) that describe the nature of the change that was made. Such records also show the specific parties responsible for the change, which the receiving facility, (assumed to be in consultation with the generator and/or transporter, makes to the data on paper. This is part of the routine waste acceptance process.

The 90-day window for such corrections should also be extendable as there are occasional corrections needed that are not identified until the waste is actually being managed/treated by the receiving facility, which may be longer than 90 days. While much less common, these situations do arise. The Board recommended that the same process and notifications for approvals (if necessary) be followed regardless of when the revisions are made and processed.

The 90-day window can be retained with respect to the timeframe for making the manifest data available to the public. However, the Board noted that some manifest data revisions could occur after that timeframe.

With the implied long-term plan to integrate the federal hazardous waste biennial reporting system (BRS) with e-Manifest and to ensure consistency between the e-Manifest and BRS systems, manifest corrections should be able to be made regardless of the time that has lapsed.

***2C. Does the Board agree with EPA's conclusion that only one party – the receiving facilities who submit final manifests to the system – should have the responsibility to access the system to enter or submit data corrections?***

The Board was somewhat divided with respect to this issue of the party responsible for submitting manifest corrections. Receiving facilities have the incentive to coordinate and come to agreement with their customers, who are the generators of the waste shipments, on any manifest revisions. Board members also noted that since the generators of the waste are also responsible and liable for the waste's proper designation, management, and treatment, the

generators also have a valid reason to be able to address and correct manifest-related data errors that may originate from their facilities or are tied to their facilities.

Board members raised the concern that the generator, or a generator's approved representative (such as a broker) should share in the responsibility to make and approve manifest corrections and that it should not be the sole responsibility of the receiving facility. It was stressed that the generator of the waste is ultimately responsible for the proper classification of their waste and that it should not be the sole responsibility of the receiving facility to make related manifest revisions. If the generator is aware of inaccurate information on the manifest they should have the ability to make or request those revisions in the system.

### **Charge 3. Level of Information Technology (IT) support for the helpdesk upon initial launch of e-Manifest system**

#### ***3A. What level of service is needed for Day 1?***

The Board advised the Agency to determine the e-Manifest helpdesk needs by first thoroughly evaluating User Interface (UI)/User Experience (UE) prior to the launch of e-Manifest. They specifically suggested that the Agency conduct Failure Mode Effect Analyses (FMEA) to analyze and to understand the complexities of the e-Manifest user experience. These analyses would help implement preventative measures to minimize the number of users that would experience difficulties with the system. They noted such analyses also would especially be useful help to address the complexities associated with the user options. The Board noted that the Agency's ultimate goal should be to create a user experience that is as flawless as possible so as to preclude the need for users to require helpdesk support.

They emphasized the importance of evaluating the UI via formal and informal pilot testing of the system with generators. The Board also advised that the helpdesk staff should be involved in these formal user testings/UI evaluations. This will ensure that the helpdesk staff are thoroughly trained and fully prepared to provide effective, highly responsive, and competent service, including expertise in CROMERR. They also recommended that the helpdesk be over staffed on Day 1 of implementation including: level 1 support providing basic preliminary support (i.e. password resetting), level 2 support for questions specific to how the application works, and level 3 support including system development experts with expertise in addressing problems associated with the functionality of the e-Manifest software system. They further recommended that the helpdesk be available to address after hour calls. A competent helpdesk and good user experience on Day 1 will be critical towards preventing users from reverting to using the paper option. The Board recommended that the Agency explore a helpdesk operation that supports newly launched software for the Department of Homeland Security to manage their chemical facility anti-terrorism standards as a potential benchmark example to learn from (<http://csat-help.dhs.gov/apex/f?p=100:1>).

***Question 3B. What level of personal vs. automated support is ideal?***

Most of the Board believed that helpdesk support should be primarily personal as opposed to automated during the initial launch phase of e-Manifest. Taking into account the demands and needs (i.e. timely service at a user fee low cost) of the user community when they first encounter e-Manifest, they are going to be expecting a system that makes their job easier. If they are immediately frustrated with difficulties from using e-Manifest, they will readily return to using the paper manifest system that they are already familiar with. Thus, the Board recommended helpdesk support that would be very personable and responsive.

They also suggested that in addition to providing robust personal helpdesk support during the initial phase of e-Manifest, the Agency should be collecting data that will help to better understand the users' experiences so difficulties can be minimized.

***Question 3C. For states/programs with similar applications, what are best practices for standing up a helpdesk?***

The Board echoed their previous recommendations that the Agency should focus on determining helpdesk resource needs based upon a significant evaluation of the users' experiences. In regards to best practices among states for planning helpdesk resources, the Board noted there is much variation among state electronic manifest systems and requirements. It would be difficult for a helpdesk to characterize every state's particular best set of related practices. However, they recommended that when the national e-Manifest system is launched, users from different states will have questions or will need support pertaining to local or state specific issues (i.e. state specific policy issues). Thus, the Board advised that the Agency closely collaborate with the states and regions in advance of deployment to assist in addressing such questions. They further reiterated the need for the Agency to allow state representatives to participate in the user testing to be familiar with the system and capable of addressing state specific issues that users may encounter.

One board member emphasized that for successful helpdesk assistance, the helpdesk staff must have the ability to see in "real time" the exact same view and screens, including user-input data, that the user is seeing during the call. Significant amounts of helpdesk staff time can otherwise be wasted even attempting to determine on what screen or in which data field the user is experiencing difficulty. Users can experience considerable frustration, and thus reluctance to continue if they attempt to follow helpdesk staff instructions "in the blind" with absent or unexpected results. The board member's state agency experienced this problem first-hand, entailing increased costs for the state to attempt to address the barrier retroactively.

***Question 3D. A primary driver for this helpdesk is moving all of our users towards a fully electronic system. How best can the helpdesk assist in this effort?***

In response to this question, the Board referred to the advice provided in Charge questions 3A and 3B. This included reiterating how important it is for the Agency to ensure that the helpdesk's support is personal, competent, responsive, and able to quickly resolve problems that users may experience. They again noted the importance in collaborating with the states for helpdesk support by, for example, ensuring that users have a state point of contact that could provide assistance for

state specific questions. They also reiterated the suggestion of enhancing the helpdesk support with automated helpdesk-like features incorporated within the e-Manifest fillable form. As discussed in 3C, they further suggested that the Agency consider incorporating a feature that would allow the helpdesk operator to also access/share the user's screen to more easily diagnose and solve the user's difficulties with the system. The Board reminded the Agency that such features will be a critical factor towards promoting customer satisfaction and will decrease the likelihood that users would prefer the paper option. The Board also asserted that it was even more important that the Agency employs a system that provides a clear cost and ease of use benefit to the user community.

#### **Charge 4. OLEM's User Fee Payment Methods Proposal and Commenters' Suggestions for Payment Approaches.**

##### ***4A. What features or incentives could be included in the advanced, fixed payment approach to make it more appealing to receiving facilities and reduce the risk from variability in use of manifests?***

Industry generally supports a monthly invoicing approach whereby receiving facilities are provided an invoice on a monthly basis for the prior month's manifest submittal activity. Other payment options such as "advanced fixed prepayments are viewed by many as unreasonable given the large number of manifest transactions expected and the great variability in manifest activity at some receiving facilities. The monthly invoicing is the most logical approach and will work well with the receiving facilities' process of invoicing their customers (manifest generators) for the associated manifest fees following acceptance of the waste shipments. This method will also be the least burdensome on the receiving facilities as it will not require estimations for prepayments and avoids the reconciliation process at the end of the term. For larger waste management organizations with multiple receiving facilities, the aggregated monthly expenditures for manifest fees will be likely over a \$100,000 and could be substantially higher. That would be based on the finalized per-manifest fees established by the Agency. Due to the significant financial impact of these transactions, it does not seem reasonable for industry to pay for e-Manifest services prior to services being rendered.

Since the prepayment option requires a reconciliation step at some later time, this option would add another time consuming process and added administrative burden. The only recognized incentives to make the prepayment option attractive would be one that provides financial incentives such as an option for lower per-manifest fees.

An alternate viewpoint of the Board considered but did not support was a subscription fee model. It would be based on count ranges of individual manifests received by a facility in the previous year – to establish Year 1 fees. Then, the fee would be adjusted annually based on the actual number of manifests uploaded to the e-Manifest system. This model can allow for payment in advance either annually, quarterly or monthly with a discount for annual pre-payment. No reconciliation charges will be billed at the end of the year; each year the fee will simply be adjusted to account for previous year actuals.

In addition, the Agency should consider the hybrid or a phased approach. This could be an alternate fee structure whereby all manifest users, generators, receiving facilities, and possibly even transporters would pay a fixed annual registration fee as opposed to a per-manifest transaction fee. This may be a practical alternative in the early stages of a phased approach; the Agency's costs to invoice for the e-Manifest system would be lower in comparison to a fully detailed billing/invoicing e-Manifest operation. In the early phases the Agency would register e-Manifest users to access the central database and would receive electronic manifest data transmittals from the receiving facilities.

Another alternative approach for consideration is for the Agency to estimate the additional cost, including uncollectable billed fees, of operating an invoicing system compared to a prepaid model without an invoicing system. Then apportion those additional costs to the base manifest fee if a system user's fees were not prepaid. This approach would afford pre-payers an effective discount, and encourage use of the prepayment model by heavy system users, who will be effectively providing the bulk of the system's operating budget, magnifying the effect of the option.

A Board member suggested a secondary alternative approach, whereby the Agency would explicitly stagger the launch of the e-Manifest system avoiding any integration with the existing paper manifest system. Under this model, the e-Manifest system and existing paper system would coexist simultaneously, neither affecting the other. This approach could allow the e-Manifest system to be launched without the significant added complexity and cost of the paper processing center, allowing the Agency to focus on perfecting the electronic system, while allowing small volume users to continue current operations unchanged. If this approach were chosen, however, the Agency would need to be extremely clear that the existing requirements for retention and copy provision of paper manifests would continue unchanged, and that generator and receiving facilities would both be responsible for clearly determining which system would be used for each hazardous waste shipment, and ensuring compliance with the differing requirements thereof.

***4B. If the initial year's appropriations are not adequate to seed several months of system operating costs, does the Board consider it reasonable for EPA to require the advanced fixed payment approach during the initial year of operations, and then allow facilities to opt out if they so choose? What other means are available within the proposed rule options to mitigate EPA's revenue stability risk during the initial period of system operations?***

As previously stated, this approach is likely not acceptable both because 1) TSDFs are not amenable "lending" EPA such large sums of money in the hopes of recovering its costs at a later time, and 2) Generators typically are unable to pay vendors for services not yet provided. Project implementation should only proceed when the Agency has the funding to cover several initial years' operating costs. At this time the Board is not aware of any other options available to mitigate the Agency's revenue stability.

## **Charge 5. OLEM’s Hybrid Manifest Proposal and Commenters’ Suggestions for a Phase-in of Electronic Manifesting.**

### ***5A. Can the Board suggest alternatives to the industry commenters’ approach that would provide a workable and credible path to widespread use of electronic manifests?***

If e-Manifest is designed so that it truly benefits the user (saves money or time, or improves compliance), then users will more likely migrate to adopting it. The e-Manifest system’s success cannot rely on lower per-manifest fees in comparison to paper or hybrid manifests alone. The e-Manifest system also needs to be a relatively simple system that provides the user an observed burden reduction over paper.

Should the Agency be able to remove the impediments caused by CROMERR, the time needed to deploy the e-Manifest system would be greatly reduced. The Agency’s ability to simplify or remove the electronic signature requirements would likely speed implementation of e-Manifest and may even result in no need for a hybrid/phased approach. Ease of use without CROMERR complications may improve user appeal and “buy-in” as well.

Should the e-Manifest system include the ability for a generator to essentially automate the filing of a biennial report (BRS), such a feature will increase the system’s appeal and promote its widespread use.

### ***5B. Can the Board recommend features or requirements (e.g., a cap on its availability) that should be included in the hybrid approach that would mitigate the risk that the hybrid might actually thwart the adoption and use of electronic manifests?***

The Board recognized that the hybrid approach may compete with the full adoption of the e-Manifest. However, if the hybrid approach provides significant benefits to the user community, at a relatively lower implementation cost than the full e-Manifest system, then it could be the best long term solution. Conversely, if a viable e-Manifest system can be built that has greater user benefits than the hybrid option, it can be widely used without the hybrid’s complications (and related costs).

A key question by the Board about the hybrid approach was whether or not it could meet CROMERR requirements. The Agency should explore this issue. It should also closely evaluate the benefits of the hybrid approach.

There is some degree of uncertainty as to the functionality of the “pdf “image of the paper manifest in the phased approaches. A key issue to promote adoption of the hybrid or phased approach is to allow a pdf image of the completed manifest to reside in the Agency’s central manifest database. This could 1) eliminate the need for the receiving facility to mail a return copy to the generator, and 2) eliminate the need for the generator to have a paper copy of the completed manifest on file at their facility. If the Agency accepts the submittal and retention of a legible image or pdf of a manifest image into the system (as an acceptable substitute for generator and/or designated facility retention of a paper copy of the manifest), then many

potential users may be significantly more apt to choose the hybrid approach over a paper based preference. Members of the Board also emphasized the critical need of the legibility of the received images. Several states have reported considerable variability in legibility and reliability of received scanned images without robust quality assurance review on the part of the receiving agency.

The Agency should also continue to partner with the waste industry service providers, many of which have existing computerized programs in place to electronically create and transmit manifest data. It is important that the Agency partner with such companies during e-Manifest development and testing to assure the system being designed would complement these existing systems and not create additional unnecessary burdens to industry to implement.

***5C. Commenters raised concerns that waste-tracking disconnects and data-integrity issues may occur since the hybrid option severs the manifest paper copy from the electronic version. Can the board recommend measures to EPA that will address these concerns?***

The Board did not believe that there would necessarily be waste-tracking disconnects and data-integrity issues due to a severing of the manifest paper copy from the electronic version if a hybrid approach is properly structured and implemented. Receiving facilities will have the responsibility to convert the paper form into an electronic manifest record (data file). This is a process that is already in place today at the vast majority of receiving facilities. Further, receiving facilities will have the obligation to assure that paper manifest revisions get properly communicated/transmitted to the Agency's central e-Manifest database. As noted above in 5B, in such a model, the receiving facilities would necessarily then be held responsible for ensuring not only the accuracy of the submitted data, but equally the legibility of scanned electronic images they retain or submit to the e-Manifest system.

